Capital Structure, Corporate Tax Avoidance, and Firm Performance: A Study of Firms in the Manufacturing Sector Listed on the Nigeria Stock Exchange

 $\mathbf{B}\mathbf{Y}$ 

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#### ABSTRACT.

This thesis explores the complex relationships between capital structure, tax strategies and corporate performance within Nigerian non-financial firms, set against the backdrop of market volatility and shifting regulatory landscapes. Through a sophisticated three-model analytical framework grounded in established theoretical paradigms, the research offers compelling insights into how financing decisions influence organisational outcomes.

The first model reveals that debt-to-equity ratios significantly predict earnings per share and Tobin's Q when examined in isolation, though only the latter remains significant when control variables enter the equation. The second model demonstrates that both the term structure of debt and effective tax rates serve as robust predictors of capital structure and firm valuation. The third model uncovers that tax rates meaningfully moderate several performance indicators without controls, but this effect largely disappears when controls are introduced, with return on assets being the notable exception.

These findings suggest that whilst capital structure decisions substantially influence firm performance, the moderating effect of tax avoidance strategies varies considerably across different metrics. The research emphasises the critical importance of market timing in optimising financing decisions to enhance returns and valuation.

The work makes a valuable contribution to our understanding of corporate finance dynamics in emerging economies. It highlights how firms must skilfully navigate financing alternatives, market conditions and tax considerations to optimise performance and competitive positioning. For practitioners, the research underscores the strategic significance of capital structure decisions; for policymakers, it illuminates how corporate tax frameworks influence business outcomes; and for scholars, it extends theoretical frameworks into the unique context of developing markets.

## ATTESTATION

I declare that this dissertation, titled "Capital Structure, Corporate Tax Avoidance, and Firm Performance: A Study of Firms in the Manufacturing Sector Listed on Nigeria Stock Exchange," is the result of original research conducted by me, Eke Chinedu, with registration number 100013718. The material presented in this work has not been previously submitted for any academic degree or qualification at any institution, except where appropriately cited and acknowledged sources have been consulted and referenced accordingly.

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Eke, Chinedu

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Date

# APPROVAL.

This dissertation titled "Capital Structure, Corporate Tax Avoidance, and Firm Performance: A Study of Firms in the Manufacturing Sector Listed on Nigeria Stock Exchange" is original research by Eke, Chinedu in partial fulfilment of the requirements for the award of Doctor of Philosophy degree (Ph.D) in Business is hereby approved.

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Head of Studies

# **DEDICATION.**

To God Almighty.

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It is with a great sense of honour that I dedicate unalloyed gratitude to my Supervisors, Dr Seyi Adesina and Professor Richard McManus, whose professional guidance and academic prodding proved consequential to the completion of this dissertation. Through their motivational tutorial efforts, I was able to advance my thoughts theoretically, empirically, and pragmatically around the concepts of this dissertation. Thanks a lot.

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#### Capital Structure, Corporate Tax Avoidance, and Firm Performance.

## **Chapter 1: Introduction.**

#### **1.0 Introduction.**

The central purpose of this doctoral dissertation is to investigate the impact of capital structure decisions and corporate tax strategies on the financial outcomes of publicly traded manufacturing enterprises on the Nigerian Stock Exchange (NSE). The research uses sophisticated econometric analyses to augment the scholarly understanding of the complex interrelationships between leverage proportions, tax minimisation techniques, and profitability metrics among Nigerian corporations. By scrutinising these vital but underexplored economic issues, the thesis strives to furnish actionable intelligence to inform policymakers, investors, and firm managers, in addition to advancing theory within the domains of corporate finance, tax policy, and development economics in the sub-Saharan context. The evidence-based insights could assist Nigerian entities in formulating improved capital budgeting and taxation approaches to enhance operational performance and shareholder value. This chapter introduces the study, clarifying the key concepts and issues under consideration while delving into both theoretical and empirical foundations. Subsequently, it outlines the study's aims and objectives, raising pertinent research questions that aid in formulating hypotheses. The chapter concludes by presenting an overview of the thesis structure, summarising the various chapters composing the work.

#### 1.1 Background and Aims.

In the contemporary finance management landscape, financing is a crucial concern amidst heightened competitiveness (Abdullah & Tursoy, 2019; Vătavu, 2015). Firms primarily rely on two fundamental sources of funds to fuel their investment decisions: internal and external

(Eniola, Adewunmi, & Akinselure, 2017; Chechet & Olayiwola, 2014). Internal financing encompasses reserves, retained earnings, and ordinary and preference stocks (Eniola *et al.*, 2017). On the other hand, external financing comprises long and short-term loans, constituting the debt component of the capital structure or raising capital through equity (Dare & Sola, 2010). My focus lies on the debt-to-equity ratio, whereby debt signifies the credit obtained from creditors and equity represents capital raised from shareholders.

In the realm of financial decision-making, managers meticulously navigate to ascertain an optimal mix of financing or debt-equity ratio for their firm. Capital structure essentially encapsulates the amalgamation of equity and debt within a firm (Damodaran, 2001; Vătavu, 2012), encompassing elements such as debt, retained earnings, and equity capital (Uremadu & Onuegbu, 2019). An ideal capital structure aims to leverage its composition to bolster the value of the firm and augment overall performance (Uremadu & Onuegbu, 2019; Vătavu, 2015; Vătavu, 2012).

The debt-equity ratio (D/E ratio) holds multiple dynamics, typically leading to increased liabilities as the D/E ratio rises, thereby exposing the firm's financial performance (Sony & Bhaduri, 2021). For instance, a D/E ratio of two signifies a higher debt structure compared to equity, translating to a ratio of 200% debt-to-equity. Similarly, this ratio can vary - ranging from a scenario with a 50-50% distribution of debt and equity (D/E ratio of 1), a 70% equity versus 30% debt (D/E ratio of 0.4), to a 60-40% equity-debt distribution (D/E ratio of 0.66). However, these are illustrative academic examples. In practice, the specific D/E mix chosen by a firm could take on various compositions and proportions.

Once chosen, the D/E ratio defines the correlation between finance held by the firm's shareholders and its creditors (Dare & Sola, 2010), thereby manifesting in various combinations of equity and debt elements within the capital structure. This option bestows

firms with the potential to harness leverage (if applicable) (Akeem, Kiyanjui, Terer & Kayode, 2014).

In management practice (Yanto *et al.*, 2021) as well as academic literature (Uremadu & Onuegbu, 2019), capital structure is seen as part and parcel of modern-day financing for corporate organisations and hence the proper usage of its dynamics to profit the firm in accordance with the firm needs has been a subject of contention in fiscal management. This contention emanates from the fact that it is not only the firm's structure of capital that controls its financial performance and overall performance as a firm, there are other finance (such as tax avoidance practices) and non-finance-oriented practices (such as integrity) which also largely determine corporate performance. Hence, firms may practice the same capital structure at different decision-making propensities, which may lead to different financial outcomes (Chechet & Olayiwola, 2014). For this reason, viewing the impacts of capital structure from a broad spectrum of other organisations' financial practices becomes important.

Since the 1950s, after the pivotal work of Miller and Modigliani (1958), the literature has been inundated with a plethora of studies delving into matters pertaining to the capital structure mix, which persists as a critical concern in contemporary corporate financial management (Abdullah & Tursoy, 2019; Eniola, Adewunmi, & Akinselure, 2017). Notably, the Modigliani and Miller Capital Structure Irrelevancy Theory (M-M hypothesis) from the 1950s posited that the capital structure remains inconsequential to firm valuation (Abdullah & Tursoy, 2019). This assertion arises from the impracticality of the M-M model's assumptions for a perfect market, where corporate value is not contingent on the company's capital structure. Consequently, major capital structure variations do not appreciably enhance firm value, despite the noted advantages of lower-cost debt capital—a principle widely acknowledged in the literature (Boyte-White, 2021).

The traditional school of thought on capital structure, as stated by Al-Kahtani and Al-Eraij (2018), proposes that companies should seek to optimise their capital structure to minimise their cost of capital. A firm's cost of capital is the minimum return needed to justify investing in new projects is commonly gauged via the weighted average cost of capital (WACC) metric, as Vătavu (2015) delineates. Given certain assumptions, the WACC framework suggests debt financing bears lower expenses than raising equivalent equity financing due to the tax deductibility of interest payments. Hence, incrementally substituting debt for equity in the capital structure could reduce overall capital costs. However, despite its conceptual appeal, the WACC model relies on restrictive premises about financial markets' efficiency and the fungibility of various financing sources. By relaxing these heroically simplified assumptions, scholars can formulate enhanced behavioural models that better represent the complex trade-offs and agency conflicts enterprises face when devising capital budgeting strategies. This research aims to construct a decision-making framework that captures such granular nuances, rather than relying on potentially inadequate traditional cost of capital models. The findings could provide more externally valid, practical implications for leveraging decisions that maximize firm value. As such, it is argued that firms can potentially increase their value, to a reasonable extent, by utilising debt financing.

The WACC (weighted Average Cost of Capital), often synonymous with the cost of capital of firms, represents the anticipated average payment that a firm remits to all security holders to fund its asset costs (Jhoansyah *et al.*, 2021; Mariani *et al.*, 2021). Effectively managing WACC stands as a critical facet in debt financing, intricately tied to determining the success of the selected capital structure within a firm. The preference for debt financing over equity is commonly associated with two principal objectives: the lower cost of debt in contrast to equity and the tax shield advantages linked to debt.

While the significance of tax shields remains a topic of debate within the literature, these shields, denoting the deductible portion of income, potentially serve as a boon for debt capital structures. They hold the capability to curtail the total income tax liabilities of a taxpayer or firm, attributed to the interests on verified loans (debts) constituting the organisation's debt structure (Almendros & Mira, 2018). Consequently, the tax shield retains its efficacy as a compelling instrument employed by managers in debt financing strategies. It's a common practice for firms to claim interest deductions for loans, even when operating without any actual debt. These interest deductions, although stemming from purported debt, are commonly assumed to assist firms in reducing their declared profits, subsequently lessening the tax burden on the actual profits.

Previous academic research suggests that one way to harness the advantages of a tax shield efficiently is to employ debt financing throughout the early stages of a company's development. According to Monterey-Mayoral and Sanchez Segura (2017), the purpose of this tactical method is supposedly to stabilise the start-up company's financial standing before taking on certain financial commitments, particularly those pertaining to taxes. Furthermore, this theory was supported by Graham and Harvey (2001), who found that when a company's share valuation is strong, it tends to choose stock over debt. Under such circumstances, even while debt financing could eventually prove to be less expensive than equity, the entity's rising share price helps to offset this cost over time. Additionally, Wurgler and Baker's (2002) empirical results demonstrated the significance of a company's stock value as a crucial factor in determining the right securities issue. Similarly, Welch (2004) found that companies intentionally adjust their capital structure to reflect stock price changes to profit from the costbenefits associated with well-functioning capital markets.

The perfect market here denotes an ideal idea market with a monopoly and where the prices of goods and services cannot be manipulated. In a perfect market, there are many sellers

as well as a large number of buyers creating a robust demand and supply chain (Muñoz, 2021). Literature (e.g. Muñoz, 2021) is consistent with the fact that most business and financial models fail on the account that their parameters were set with perfect market conditions which are unrealistic in the real market world. In the perfect market condition, transaction costs are nonexistent while entry and exit to and fro the market are neither restricted nor regulated. Unrealistically, perfect market variability theory assumes the uniformity of price with frictionless markets operated by investors with rationality and price and market information equality (Munoz, 2021). In neutralising the effects of making financing assumptions on rare perfect market structure, organisational management has become aware that practically, what works ought to be close to the real market situation in theory and practice (Graafland & Verbruggen, 2022). For instance, while the M-M proposition was hinged on a perfect market context, making its limitations obvious, other theories such as the agency theory, pecking order theory, and trade-off theory emerged to deal with the issues of market imperfections thereby providing a real market situation as close as possible (Abdullah & Tursoy, 2019). Thus, later theorems attempt to correct the limitations of M-M prepositions by allowing understanding and corporate preparedness towards dealing with the real market that is manipulative in favour of someone organisations who have undue advantage over others and the real market in which the forces demand and supply play either be monopolised or manipulated, creating an obvious imbalance in most market structures.

Previous studies have extensively explored the intricate nexus between capital structure and firm performance, producing varied results. Using measures like Return on Assets (RoA), Return on Equity (ROE), and EBIT, analyses by Das, Chowdhury, and Islam (2021) in Bangladesh, Chakraborty (2010) in India, and Huang and Song (2006) in China have shown an inverse relationship between firm performance and leverage. Conversely, Jaisinghani and Kanjilal's (2017) investigation in India identified a positive link between RoA and leverage, especially in larger firms. Akinyomi (2013) in Nigeria found a positive correlation between equity and debt ratios and both RoA and ROE. Despite these divergent findings, a recurring theme in the literature is that financially robust companies tend to adopt tax avoidance strategies (Alm, Liu, & Zhang, 2019; Dang & Tran, 2021; Edwards, Schwab, & Shevlin, 2016). This pattern highlights debt's perceived tax shield advantage in managing tax liabilities. Consequently, effective corporate management hinges on identifying an optimal ETR aligned with the organisation's short, medium, and long-term objectives. The strategic determination of ETR emerges as a crucial aspect of corporate planning and management, providing a competitive edge in the private sector landscape (Rahnama *et al.*, 2019)

For a firm or corporation, an ETR is the taxable percentage of the firm's income before taxation. ETR should not be confused with the marginal or ordinary tax rate which represents the legal percentage of that which a company ought to pay (Tenant & Tracey, 2019). Many financial circumstances have driven many organisations into the search of how to pay the percentage of their actual earnings, which economically represents the real taxable part of their gross earning. In practice, ETR majorly implies federal income taxes or, where otherwise stated as a centralised tax and excludes other state and local taxes such as property, sales, etc, which are distinct taxes from taxes that individuals pay as income taxes (Tenant & Tracey, 2019). Unlike individual taxes, which are determined by state and local government and which vary from state to state as there are low-tax states and high-tax states, ETR is generalised with uniformly spread across corporations. The importance of ascertaining ETR lies in tax planning which can help a company save a significant portion of its income by paying only the taxable income part (Abbas & Eksandy, 2020). Tax planning can benefit a company not just annually, but for the lifetime of the company when the right and appropriate measures are taken to obtain the real and taxable part of the company earnings. Thus, in maintaining the financial stability of a firm, tax planning aimed at determining ETR is crucial to the overall financial success of the company. There are important relationships across different accounting data and the impact of taxation. For instance, Tenant and Tracey (2019) linked corporate profitability to the inherent effective tax rate. Additionally, based on empirical data obtained from publicly traded Australian companies, Richardson, Taylor, and Loiss (2013) discover that the extent of a company's indebtedness influences its engagement in corporate tax avoidance.

Corporate tax avoidance may be termed as any licit, questionable, or illicit practice to reduce taxable income (Chen, Chen, Cheng, & Shevlin, 2010). Corporate income taxes represent obligatory expenditures mandated by state authorities, governed by prescribed regulations for incorporated firms (Edwards, Schwab, & Shevlin, 2013, p.6). Tax revenue constitutes a critical funding source for governments across the globe (Dang & Tran, 2021; Wang, Xu, Sun, & Cullinan, 2020), facilitating public service provision, infrastructure development, and national defence capabilities (Avi-Yonah, 2006; Williams, 2011). The literature has witnessed an upsurge in corporate tax avoidance practices in recent times (Dang & Tran, 2021; Majeed & Yan, 2019). The interest is primarily driven by growing public pressure consequential upon increasing media scrutiny and regulation from government institutions (Dyreng, Hoopes, & Wilde, 2016; Majeed & Yan, 2019). Corporate tax avoidance accelerates the erosion of valuable governing commons (Bird & Davis-Nozemack, 2018) and is particularly widespread in developing nations (Dang & Tran, 2021; Khuong, Liem, Thu, & Khanh, 2020). From a societal standpoint, it stifles a state's capacity to furnish essential services presently and, in the future, (Bird & Davis-Nozemack, 2018; Majeed & Yan, 2019).

Tax avoidance eroded the government's revenue, thus hindering the financing of vital developmental projects essential to a well-functioning society (Bird & Davis-Nozemack, 2018; Khuong, Liem, Thu, &Khanh, 2020; Slemrod, 2004). The repercussions of corporate tax avoidance are manifold and carry various implications for a business (Istrate & Lazar, 2018). Corporate tax avoidance holds the potential to harm corporate reputation (Fisher, 2014), firm

value (Chang, Hsiao, & Tsai, 2013), profitability (Katz, Khan, & Schmidt, 2013), stock prices (Hanlon & Slemrod, 2009), and the cost of capital (Lim, 2011; Cook, Moser, & Omer, 2017). Previous research has predominantly employed the ETR as a proxy for corporate tax avoidance (Delgado, Fernández-Rodríguez, & Martínez-Arias, 2018; James, 2019; Salehi, Khazaei & Tarighi, 2019; Vu & Le, 2021). However, the inconsistent results may be attributed to institutional differences among various countries. For instance, studies by Desai and Dharmapala (2009); Wang (2010); Inger (2013); Wilson (2009) find a positive affiliation between firm value and tax sheltering. They report the positive association or relationship in well-governed companies, which characterise the majority of firms in developed countries as compared to their developing counterparts with poor regulatory frameworks. The moderating effect is premised on the fact that tax avoidance may be affected by capital structure while also affecting firm performance (Ngatno, Apriatni, & Youlianto, 2021).

The Nigerian manufacturing sector, the primary focus of this study, plays a pivotal role in the nation's economic growth and development. Major industry players, including Dangote Cement, PZ Cussons, Cadbury, Guinness, and Nigerian Breweries Plc., dominate the market in Western Africa, contributing significantly to revenues. However, despite their prominence, the sector's relative contribution to the tax revenue base has been subject to debate, particularly when compared to developed countries. Furthermore, recent times have seen a decline in productivity within the manufacturing industry (Obamuyi, Edun, & Kayode, 2012), exacerbated by the economic recession and the adverse impacts of COVID-19. A decline in the manufacturing sector was shown by the manufacturing index, which as of January 2017 was 48.2 index points, below the 50-point threshold (CBN, 2017). Nigeria has experienced erratic economic growth, frequently entering and exiting recession in recent years. Against this backdrop, this research delves into the individual impact of capital structure and examines the moderating effect of tax avoidance on the interplay of these two variables.

#### 1.1.1 Problem Statement.

The availability of finance is integral to the sustenance of any business, and its inadequacy has been a significant factor contributing to the failure of many firms in Nigeria (Uremadu & Onuegbu, 2019; Ogebe, Ogebe, and Alewi, 2013). This vulnerability was particularly evident during the challenging period of the COVID-19 pandemic (Onyekwena & Ekeruche, 2020). Recently, the country witnessed a rise in the number of failed and/or delisted firms (Iliemena & Goodluck, 2019). The operational uncertainty of the macro-environment, like political risk, volatile exchange, and lending rates pose dire consequences for firms in the country (Uremadu & Onuegbu, 2019). It is estimated that 30 per cent of firms are nearing shutdown, 60per cent are classified as ailing and 10 per cent operating at sustainable levels (Manufacturers Association of Nigeria [MAN] (Onuorah & Kifordu, 2021). In addition, the institutional context of tax avoidance has been relatively underexplored from a developing country perspective (Wang *et al.*, 2020; Cobham & Jansky, 2018; Khuong*et al.*, 2020).

Prior research works explored factors that affect or determine a firm's capital structure; and, yet other authors examine corporate tax avoidance and firm performance. Interactions between capital structure and financial performance have been the subject of conflicting research in a variety of nations and situations. Leverage and company performance have been the subject of several studies. Das, Chowdhury, and Islam (2021) in Bangladesh, Kenn-Ndubuisi, Ifechi, and Nweke (2019) in Nigeria, Samo and Murad (2019) in Pakistan, and Mohamad and Abdullah (2012) in Malaysia have all established a negative impact of leverage on firm performance. Conversely, Abdullah and Tursoy (2019) in Germany, Eniola, Adewunmi, and Akinselure (2017) in Nigeria, Zeitun and Tian (2007) in Jordan, and Abor (2005) in Ghana reported a positive effect of debt finance on firm performance.

Nevertheless, within the area of developing countries, there exists a paucity of literature addressing the interplay among capital structure, corporate tax avoidance, and firm performance. Taxation plays an essential role in shaping the connection between the debt-toequity mix and firm performance (Vătavu, 2015). As posited by Ortas and Gallego-Álvarez (2020), firms with substantial leverage are prone to employing 'tax deductible interest payments,' consequently fostering the development of more assertive tax policies. However, prior studies document mixed findings on the issue. Martínez-Arias and Fernández-Rodríguez (2014) found it to be positive whereas; while Hadjidema, Stamatopoulos, and Eleftheriou (2016), Nomura (2017) found a negative affiliation or link between high tax burden and leverage. In the study by Chen et al. (2014), the authors observe that tax avoidance may not improve firm value in developing countries with less transparent financial reporting environments when compared to developed counterparts.

Furthermore, in alignment with the investigation conducted by Das, Chowdhury, and Islam (2021) and Delgado, Martínez-Arias, and Fernández-Rodríguez (2018), this research incorporates Quantile Regression as a robustness check to analyse the nonlinear-impact of independent and moderator variables on firm performance. Utilising this approach helps to relax the linearity assumption inherent in the Ordinary Least Squares (OLS) technique (Delgado, Martínez-Arias, & Fernández-Rodríguez, 2018). Within this framework, the current study aims to assess both the direct influence of capital structure on firm performance and the moderating role of tax avoidance in the relationship between nonlinear-impact capital between structure and firm performance. This aspect has not been adequately and empirically explored within the Nigerian context.

The existing literature has overlooked the examination of the interplay among capital structure, corporate tax avoidance, and firm performance within the Nigerian context, thereby prompting the initiation of the current study. Additionally, the inconclusive and varied findings regarding the nexus between capital structure and firm performance, either aligning with the pecking order or trade-off theory, serve as a motivation for this study. The incorporation of tax

avoidance allows for an exploration of whether this relationship is weakened or strengthened. The prevailing regulatory landscape in Nigeria serves as a conducive research setting, given the mandate by the Federal Government in 2012, compelling all publicly quoted companies to adopt IFRS as the reporting standard. Furthermore, the Financial Reporting Council (FRC) in 2019 introduced the ease of doing Corporate Governance, aiming to institutionalise best practices in corporate governance in Nigeria. The selection of this specific period aligns with the regulatory changes and the relative scarcity of empirical studies during this timeframe, emphasising the need to investigate the interaction effect. This study focuses specifically on the manufacturing sector, differentiating itself from prior research that primarily concentrated on conglomerates, consumer goods, and user-industrial sectors. By aggregating non-financial firms across diverse sectors, the current study contributes to enhancing the generalisability of findings and addressing gaps observed in earlier research.

## 1.1.2 Aim and Objectives of the Study.

The primary objective of this research is to investigate the impact of capital structure and corporate tax avoidance on the financial performance of firms. The study will specifically focus on addressing the following research objectives:

- To determine the impact of debt-to-equity finance on firm performance parameters in Nigeria.
- 2. To ascertain how debt-to-equity has been impacted by the term structure of debt in Nigeria.
- To ascertain how firm performance parameters have impacted the term structure of debt in Nigeria.
- 4. To ascertain the moderating effects of the effective tax rate on the impact of debt-to-equity finance on firm performance in Nigeria.

1.1.3 Research Questions.

The research proposes and searches for answers to the following listed research questions below:

- 1. What is the impact of the debt-to-equity ratio on firm performance parameters in Nigeria?
- 2. What is the impact of firm performance on the term structure of debt in Nigeria?
- 3. What is the impact of the effective tax rate on the debt-to-equity ratio and performance in Nigeria?

4. What is the moderating effect of tax avoidance on the impact of debt-to-equity on firm performance in Nigeria?

#### 1.1.4 Justification for Research.

The justification for studying capital structure, corporate tax avoidance, and firm performance in developing economies like Nigeria, as opposed to developed economies, stems from the significantly different operating environments and institutional contexts. These differences create unique challenges and opportunities for firms in developing markets, making the study of capital structure dynamics particularly relevant.

First, the capital markets in developing economies are often characterised by imperfections, including limited access to external financing, information asymmetry, and higher transaction costs. These imperfections constrain firms' financing choices and make them more reliant on internal funds or debt financing. Unlike firms in developed economies with diverse funding options, Nigerian firms face difficulties accessing long-term capital, leading to a greater reliance on short-term debt, which can increase financial risk. This reliance on debt can be further exacerbated by corruption within capital markets, where access to funds may be influenced by bribery or favouritism, distorting efficient capital allocation.

Second, inconsistent fiscal policies and frequent changes in tax laws in developing economies create uncertainty and complexity for businesses. This dynamic environment forces firms to engage in more active tax planning strategies, including tax avoidance measures, to manage their tax liabilities. In contrast, developed economies typically have more stable and predictable tax regimes, allowing firms to focus on core business operations rather than constantly adapting to new tax regulations. In Nigeria, inconsistent fiscal policies make longterm financial planning challenging, pushing firms to seek short-term gains through tax avoidance, which can impact their capital structure decisions.

Third, the harsh economic and business environment in many developing economies, including Nigeria, poses significant challenges for firms' financial performance. Factors such as high inflation, currency volatility, inadequate infrastructure, and political instability can negatively impact profitability and cash flow. These factors influence firms' ability to service debt and make investment decisions, directly affecting their capital structure choices. Furthermore, the lack of robust technology for real-time data and poor synchronisation of existing data, coupled with undue bureaucratic bottlenecks, creates inefficiencies and increases operational costs, further influencing financing decisions.

Fourth, weak enforcement of regulatory laws and a lack of transparency in financial reporting in developing economies can lead to corporate governance issues and sharp practices by firms. This can affect the reliability of financial data and increase information asymmetry between firms and investors, impacting the cost of capital and access to finance. In Nigeria, poor enforcement of regulatory laws can enable firms to engage in aggressive tax avoidance strategies or manipulate financial statements, making it difficult to assess their true financial health and influencing capital structure decisions. This lack of transparency in stock exchange data further complicates the analysis of market dynamics and firm performance.

Fifth, data insufficiency and poor data quality are common issues in developing economies. This makes empirical research on capital structure and firm performance more challenging. The lack of reliable and comprehensive data can limit the scope and generalisability of research findings. Furthermore, data manipulation and sharp practices by some firms can further distort the available data, making it difficult to conduct accurate analyses. This scarcity and unreliability of data, coupled with insufficient access to robust technology, make it difficult to conduct timely and accurate research on capital structure dynamics in Nigeria.

Finally, the combination of these factors creates a unique context for studying the interrelationships between capital structure, corporate tax avoidance, and firm performance in developing economies. The findings from these studies can provide valuable insights for policymakers, regulators, and businesses operating in these challenging environments. In Nigeria, understanding these dynamics is crucial for promoting sustainable economic growth and development.

#### **1.2 Contributions of the Study.**

The issue of tax avoidance and capital structure remains vital as both a policy issue and at the firm level (Khuong, Liem, Thu, & Khanh, 2020). The study has made five contributions: The study makes several significant contributions to the existing knowledge in the field of corporate finance, particularly in the context of the Nigerian manufacturing sector. Firstly, the research adopts a comprehensive and multifaceted approach to examining the relationship between capital structure and firm performance by incorporating diverse performance measures, including return on assets (RoA), Tobin's Q, earnings per share (EPS), EBIT, and EBITDA. This holistic perspective provides a more nuanced understanding of the impact of financing decisions on various aspects of a firm's financial health, setting a new standard for future studies in this area (see section 6.5)

Secondly, the study introduces the effective tax rate (ETR) as a moderating variable in the relationship between capital structure and firm performance, representing a significant departure from the existing literature. By exploring the interaction between financing decisions and tax considerations, the research offers a more context-specific understanding of how capital structure impacts firm outcomes, enriching existing theoretical frameworks and providing valuable insights for managers and policymakers.

Thirdly, the study demonstrates a solid commitment to methodological rigour by employing a comprehensive set of statistical techniques and diagnostic tests, including multiple estimation methods (OLS, FEM, REM, and GMM), Hausman tests, auto-correlation diagnostics, and robustness checks. This approach ensures the findings' reliability, validity, and generalisability, setting a high standard for future research in the field.

Furthermore, the study engages extensively with prior empirical research and dominant theoretical frameworks, such as the pecking order theory and the trade-off theory, providing a deeper understanding of the underlying mechanisms driving the observed relationships. Finally, the research offers significant policy implications for the Nigerian manufacturing sector, informing decision-making processes for policymakers and managers seeking to promote the industry's growth and competitiveness.

## **1.3 Statement of Hypotheses**

The following hypotheses have been formulated in line with the objectives of the study to guide the study:

H1: The debt-to-equity ratio has a significant positive effect on the return on assets of quoted manufacturing firms in Nigeria.

H0: The debt-to-equity ratio has no significant effect on the return on assets of quoted manufacturing firms in Nigeria.

H2: The debt-to-equity ratio has a significant positive effect on earnings per share of quoted manufacturing firms in Nigeria.

H0: The debt-to-equity ratio has no significant effect on earnings per share of quoted manufacturing firms in Nigeria.

H3: The debt-to-equity ratio has a significant positive effect on Tobin's Q of quoted manufacturing firms in Nigeria.

H0: The debt-to-equity ratio has no significant effect on Tobin's Q of quoted manufacturing firms in Nigeria.

H4: The debt-to-equity ratio has a significant positive effect on the EBIT of quoted manufacturing firms in Nigeria.

H0: The debt-to-equity ratio has no significant effect on the EBIT of quoted manufacturing firms in Nigeria.

H5: The debt-to-equity ratio has a significant positive effect on the EBITDA of quoted manufacturing firms in Nigeria.

H0: The debt-to-equity ratio has no significant effect on the EBITDA of quoted manufacturing firms in Nigeria.

H6: The term structure of debt has a significant positive effect on the debt-to-equity ratio of quoted manufacturing firms in Nigeria.

H0: The term structure of debt has no significant effect on the debt-to-equity ratio of quoted manufacturing firms in Nigeria.

H7: The term structure of debt has a significant positive effect on firm performance of quoted manufacturing firms in Nigeria.

H0: The term structure of debt has no significant effect on the firm performance of quoted manufacturing firms in Nigeria.

H8: The effective tax rate has a significant negative effect on the debt-to-equity ratio of quoted manufacturing firms in Nigeria.

H0: The effective tax rate has no significant effect on the debt-to-equity ratio of quoted manufacturing firms in Nigeria.

H9: The effective tax rate has a significant negative effect on firm performance of quoted manufacturing firms in Nigeria.

H0: The effective tax rate has no significant effect on firm performance of quoted manufacturing firms in Nigeria.

H10: The effective tax rate significantly moderates the relationship between the debt-toequity ratio and return on assets (ROA) of quoted manufacturing firms in Nigeria.

H0: The effective tax rate does not significantly moderate the relationship between the debtto-equity ratio and return on assets (ROA) of quoted manufacturing firms in Nigeria.

H11: The effective tax rate significantly moderates the relationship between the debt-toequity ratio and earnings per share (EPS) of quoted manufacturing firms in Nigeria.

H0: The effective tax rate does not significantly moderate the relationship between the debtto-equity ratio and earnings per share (EPS) of quoted manufacturing firms in Nigeria. H12: The effective tax rate significantly moderates the relationship between the debt-toequity ratio and Tobin's Q of quoted manufacturing firms in Nigeria.

H0: The effective tax rate does not significantly moderate the relationship between the debtto-equity ratio and Tobin's Q of quoted manufacturing firms in Nigeria.

H13: The effective tax rate significantly moderates the relationship between the debt-toequity ratio and EBIT of quoted manufacturing firms in Nigeria.

H0: The effective tax rate does not significantly moderate the relationship between the debtto-equity ratio and EBIT of quoted manufacturing firms in Nigeria.

H14: The effective tax rate significantly moderates the relationship between the debt-toequity ratio and EBITDA of quoted manufacturing firms in Nigeria.

H0: The effective tax rate does not significantly moderate the relationship between the debtto-equity ratio and EBITDA of quoted manufacturing firms in Nigeria.

## **1.4 Thesis structure**

The study is structured and presented in seven chapters, which are briefly described hereunder as follows:

#### **Chapter 2:** Review of Related Literature

This ensuing chapter delves deeper into the intricacies of key concepts, namely, capital structure, corporate tax avoidance, and firm performance. The chapter is subdivided into four main sections as follows: conceptual review, theoretical review, conceptual framework, and empirical review. The chapter concludes with propositions of testable hypotheses to guide the study.

The study employs a positivist approach and quantitative research design, utilizing secondary panel data from annual reports of 66 non-financial Nigerian firms from 2011 to 2020. The research procedure involves data gathering, management, design testing, and analysis to investigate the relationship between debt-to-equity ratio, effective tax rate, and firm performance. The study specifies static linear models and moderation regression equations, along with robustness checks using GMM estimation. Control variables such as firm size, age, sales growth, board size, and market-to-book ratio are included. The study contributes to understanding capital structure dynamics and their performance implications in the Nigerian context.

#### Chapter 4: Data Presentation and Analysis

The study investigates the relationships between capital structure, effective tax rate, and firm performance in Nigerian non-financial firms using panel data analysis. It finds significant positive effects of debt-to-equity ratio on profitability and valuation metrics, with effective tax rate moderating these relationships. Robustness tests using GMM and worldwide governance indicators confirm the main findings. The Bonferroni adjustment and Arellano-Bond test validate the statistical significance and auto-correlation assumptions of the models. The results contribute to understanding capital structure dynamics and their performance implications in the Nigerian context, informing theoretical developments and practical decision-making.

#### **Chapter 5: Discussion of Findings**

The study examines the relationship between capital structure, effective tax rate, and firm performance in Nigerian manufacturing firms. Using panel data analysis, it finds that the debt-to-equity ratio positively affects profitability and valuation metrics, while effective tax rate moderates these relationships. The findings support the trade-off theory and highlight the importance of integrating tax considerations into capital structure decisions. The study contributes to theoretical advancements by validating predictions, synthesising perspectives, and providing context-specific insights. Practically, it informs optimal financing strategies, risk management, and stakeholder communication. The research enhances understanding of capital structure dynamics and their performance implications in developing markets.

#### Chapter 6: Conclusion

The study examines the relationship between capital structure, effective tax rate (ETR), and firm performance in Nigerian manufacturing firms. It demonstrates ETR's moderating role in the debt-performance link across multiple profitability and valuation metrics. The findings offer policy insights for optimising the financing mix, corporate governance, and tax planning to enhance competitiveness. The study's comprehensive approach, robust methodology, and theoretical integration contribute to corporate finance literature, while its context-specific implications guide decision-making in developing economies.

## 1.5 Summary.

This introductory chapter has laid the foundation for the doctoral study investigating the impact of capital structure decisions and corporate tax strategies on the financial performance of publicly traded manufacturing firms in Nigeria. Elucidating the background, aims, and problem statement has emphasised the critical role of financing in sustaining business operations amidst a challenging macroeconomic environment. The chapter has highlighted the lack of research examining the interplay among capital structure, tax avoidance, and firm outcomes within the Nigerian context, thereby underscoring the study's significance.

The research is not just an academic exercise but a practical endeavour to bridge the gap in knowledge. It aims to determine the influence of debt-to-equity ratios on performance parameters, explore how the term structure of debt affects and is impacted by these metrics, and ascertain the moderating effects of effective tax rates. By addressing these objectives through a robust quantitative approach, the study seeks to provide actionable insights for policymakers, investors, and corporate managers, thereby contributing to the real-world application of the research.

The anticipated contributions span theoretical advancements in corporate finance, tax policy, and development economics and practical implications for optimising capital budgeting and taxation approaches. By setting forth a comprehensive structure encompassing a literature review, methodology, data analysis, discussion, and conclusion, the thesis endeavours to deliver a rigorous and impactful investigation.

In conclusion, this chapter has not only established the rationale, scope, and organisation of the doctoral research but also laid the groundwork for a comprehensive exploration of the nexus between financial leverage, tax planning, and corporate performance in Nigeria's manufacturing sector. The findings of this study are not just academic insights but potential game-changers that can enrich scholarly understanding, inform policy formulation, and guide managerial decision-making, ultimately fostering the growth and competitiveness of this vital industry.

#### **Chapter 2: Review of related literature.**

#### 2.1 Introduction.

This segment concentrates on a meticulous literature review that systematically examines the concepts elucidated in the study. The literature search was expedited from reputable academic resources. The chapter concludes with the formulation of the research hypotheses, which are intended to guide the study. Thereafter, a schematic representation of the proposed relationship among the study variables developed.

In today's world, as in the past, the capital market plays a pivotal role in strengthening the private sector, which is essential for economic growth and national development. Without capital (which is always scarce) as a development resource, the performance of any private sector will be undermined (Abor *et al.*, 2019). Hence, for entities to operate optimally, attain their objectives, and capitalise on market opportunities, they need to strategize, identifying viable sources of capital and determining the most suitable capital structure to ensure profitability while maintaining operational efficiency. Thus, capital stands as a crucial resource for enhancing organisational productivity.

Capital is among the critical resources required for the implementation of organizational and business goals. Throughout organisational life, capital is a strategic resource for the initiation, implementation, and sustenance of business strategy; it is like the livewire of any organisation (Hasan et al, 2021; Sikveland et al, 202). Without a visible structure that integrates the provision, utility, and outcome of organizational finances, organizational growth remains a threat.

Like organisations, tax (income) accruals to the government are like what capital is to firms; unfortunately, however, many companies deliberately and systematically avoid either payment of full tax accruals or part of it. Many organisations believe that they can avoid tax legally through the conventional closure of part or organisational earnings to withhold taxes there to them (Hasan et al, 2021). Thus, organisations with good fiscal policy finances must maintain a healthy ball between capital structure and tax avoidance.

This review of the capital structure shall be incomplete without equating it to organisational or firm performance. Performance sets the criteria to ascertain and examine the impacts of funding or financing options in organisations. The performance attempts to measure the firm's overall contribution to its utility because the reason for different forms of capital structure or firm's financing options is to leverage and take advantage of cheaper methods of funding targeting to reduce the cost associated with funding options such as interest rates, shared profits and cost of dividends. It is also important to organisations that the method of financing considers options that guarantee greater profitability in terms of duration for repayment of funding, method of repayment, and possible debt conversions. Options may equally be sought in capital equivalence such as supply of raw materials, equipment, and production management which all have an imperative on the firm's finances and capital outlay. In this sense, capital structure options, either debt or equity may be considered in the light of their availability, affordability, and profitability to the firm. Thus, in all evaluations of the capital structure of firms, it is given that the chosen financing option contributes tangibly and marginally to the production performance.

Thus, the role of performance criteria under certain organizational factors in play in the management of financing options is to help evaluate the contribution of different forms of financing or capital structure undertaken by a firm. Performance over time (if all factors are integrated) informs management of the peculiarities of the options studied circumstances (although options may not yield exactly the same effects on firms given their differences, especially in management styles and operating environments. It's therefore valid thinking to utilise the firm's performance criteria in an attempt to understand the role of capital structure.
Hence, this study must delve into the repercussions of the DER as a pivotal element in the capital structure or financing alternatives for firms. This composition provides the adaptive functionality of incorporating diverse levels of debt and equity to strike a balance in the cost of capital and its impact on a firm's performance. The intricate nature of this dynamic blend is predominantly influenced by the unique circumstances and characteristics of each organization, thereby making it challenging for companies within the same sector but with distinct backgrounds to achieve similar performance outcomes when adopting identical financing strategies. This simplified illustration vividly underscores the spectrum of financing choices and the utilisation of DER as a manifestation of capital structure.

To understand the importance of performance in justifying capital structure dynamics, it is always best practice to consider different dimensions of performance and not singular performance criteria. The efficacy of using performance parameters enables firms to ascertain what type of capital structure influenced which type of performance criteria. It also assists in determining how the potential of each type of capital structure combines to maximize its benefits. This study has directed its attention to three pivotal performance metrics: Tobin's Q, EBIT, and Earnings Before Interest, Tax, Depreciation, and Amortisation (EBITDA). These performance parameters are deemed robust indicators for evaluating the appropriateness of diverse capital structure compositions, including the DER.

Furthermore, the review will meticulously investigate the influence of taxes on the intricacies of capital structure dynamics. Specifically, it will concentrate on delineating the impact of taxes on the utilisation of DER as an exemplary model for firms' capital structures. To ascertain this, a relationship between capital structure dynamics using the DER will be established with firm performance in Nigeria while the impact of the tax will be used as a moderating factor in the relationship. Tax represents a significant financial outlay for any organization, exerting a profound influence on firm performance. The consideration of tax

dynamics is a pivotal factor in the ongoing discourse surrounding the determination of an optimal capital structure for a firm. The magnitude of tax expenses plays a crucial role in shaping a strategic capital structure that effectively manages the costs associated with taxes and their overarching impact on performance. Distinctive tax environments, whether characterized by substantial tax reductions, tax shields stemming from government policies, or tax incentives for specific sectors, can lead to variations in the capital structure preferences among firms. Additionally, a firm's tax management practices, including legal avenues for tax reduction, corporate social responsibility initiatives, or even more dubious approaches such as tax avoidance, have implications for the chosen capital structure and, consequently, exert a notable influence on the overall firm performance.

Hence, tax management is an integral part of capital structure which has performance implications and to elucidate more on it this review extended its exploration on the use of tax and how it impacts the way that corporations arrange their capital. The review was predicated on the moderating effects of the tax on the link between capital structure (DER) and on a priori performance metrics to be identified, taking into account the significance of tax management in performance and capital structure choice. The moderation paradigm of tax is expected to provide an understanding of how tax status and tax dynamics of a firm or organization may also affect the DER-Performance hypothesis. Thus, a new model, the DER-TAX-Performance hypothesis will be reviewed as an organizational dynamic which offers insights into the effectiveness of a firm's capital structure.

This literature review is structured into three key segments to comprehensively explore the foundations supporting the relationship between capital structure and firm performance. These segments encompass a conceptual examination, a theoretical analysis, and an empirical scrutiny of the existing literature. Under the conceptual review, the capital structure will be reviewed as the most important element for the modern-day business operation which is hinged on methods of financing a firm's operations. They will extensively deal with long-term, medium-term and short-term financing options as essential for the firm's long-term and consistent effectiveness. The review will also consider differences in industries and sector demands on the type of financing options suitable to their operations. In this regard, the Debt-equity (D/E) mix will be explored. The review also looked at the factor determinants of effective capital structure (e.g., liquidity, firm size, risks etc.) as a company cannot arbitrarily choose any financing options. The examination of capital structure will be culminated by an evaluation of its association with crucial performance indicators, including but not limited to; Return on Assets (RoA), EBIT, and Earnings Before Interest, Tax, Depreciation, and Amortisation (EBITDA).

A firm's performance is something that affects a lot of stakeholders, company owners, management, workers, and investors. It is only when the meaning is holistic and construed from the perspective of the stakeholders can the term performance be properly conceptualised. The meaning of performance to investors may appear not to be the same as that of the management or the owners. In this regard, the performance of a firm is relative to the interest of the assessor. For instance, a firm may post a significant EBIT and profit before tax (PBT), however, depreciation and amortisation may chalk them off. Again, firms may post large earnings and high interest rates due to debt and taxation may render such performance useless to the investor such that earnings per share or declared dividend per share is poor. Therefore, the conceptualisation of performance was against these parameters which were indicants of performance used in the study. The analysis also noted how the firm's tax management may act as a moderator in the correlation between the capital structure mix (DER) and the company's performance. The moderating process is examined to offer connections about the ways in which the tax code and management impact the connection between their debt and equity mix financing and the primary performance standards, including; RoA, EBIT, EBITDA and the general performance of the firm as Tobin's Q. The moderation review provides further insights into other determinants of firm performance which may affect financing options such as DER mix. Thus, the moderation is to ascertain the function of DER-TAX-RoA-EBIT-EBITDA-Tobin's Q.

Under the theoretical review, theoretical assumptions which underpin the relationship effects among constructs of the study were reviewed including a framework which holistically underpins the relationship effects among variables. Bearing in mind that there is a non-singular theory which can fully address the relationship between capital structure and firm performance, the review explored the underpinnings provided by the following theories:

- a. PoT by Myers and Majlufin (1984) to provide an understanding of the sequential funding choices of firms in internal and external financing decisions.
- b. Trade-off theory (ToT) by Adair and Adaskou (2015) to provide an understanding of how firms choose to allocate their resources after a trade-off analysis of the tax benefits of debt; especially on the relationship which exists between the gains of increasing debt quantum and the costs of increasing indebtedness.
- c. AcT by Jensen and Meckling (1976) to provide an understanding of the engagement of the other parties by the principal to carry out certain beneficial financing decisions on behalf of the firm.
- d. Market timing theory by Lucas and McDonald (1990) to provide an understanding of the phases of market economy which may favour a firm in relation to the sector, environment and nature firm's operation to determine beneficial financing options.

Finally, the empirical examination shall seek evidential support in the literature regarding the concepts and constructs being studied. This empirical review was organized in this format to capture the expected relationship effects:

- a. Impact of debit-to-equity ratio on firm performance
- b. Impact of the term structure of debt on firm performance
- c. Impact of the effective tax rate on debt-to-equity ratio
- d. Impact of tax avoidance on firm performance

The empirical examinations of the above in context provided a wide application of capital structure to different scenarios of financing in different sectors and under different financial circumstances. The findings in the empirical reviews further provided linkages to the impacts of a firm's financing options on a firm's financial performance.

Finally, the review of the literature was concluded with a summary of reviewed conceptual definitions and operationalized usage, a theoretical review in view of theories which underpin the relationships examined and empirical evidence in support of the framework. The summary presented the highlights of the literature review in relation to the variables studied.

## 2.1.1 Nigeria and Nigerian Stock Exchange Group (NGX)

One cannot succinctly discuss the relevance of capital structure in Nigeria without understanding the dynamics of the Nigerian Stock Exchange market which is still evolving and developing with the peculiarities of the third world economy. The Nigerian Exchange Group (NGX), formerly known as the Nigerian Stock Exchange (NSE), provides a distinctive setting for analysing the interplay between capital structure, firm performance, tax effectiveness, and debt term structure. This distinctiveness stems from Nigeria's developing market characteristics, which present specific challenges and opportunities for firms listed on the NGX. These peculiarities together characterise the market and further set it aside with unique econometrics worthy of studying especially in the context of; limited market depth and liquidity, concentrated ownership, information asymmetry, capital market corruption and sharp practices leading to distorted market efficiency and negative impacts on financing decisions, inconsistent policy changes leading to uncertainty and creating planning challenges which affect term structure of debt, lack of data synchronisation and poor technological infrastructure affecting research quality and data quality issues for future projections, unaccounted specific tax incentives, and the recurrent problem of tax avoidance and evasion. These problems are characteristics of a developing economy which require time, personnel, infrastructure and finance to solve.

In terms of limited market depth and liquidity, it is evident that the NSE cannot compete with other global stock exchange groups in terms of firm listing and trading volumes; this is a result of a less developed market, illiteracy and policy of government. This has orchestrated limited options for raising equity or debt capital with far-reaching consequences such as higher costs of capital due to lower liquidity and investor participation. The limited market depth discourages foreign investments and reduces market efficiency. This leads firms to rely more on traditional financing options such as bank loans, which tend to be more expensive and shortterm in Nigeria. Such dynamics often result in suboptimal capital structures, reducing firm performance and financial flexibility.

Again, there is the problem of concentrated ownership with greater control coming from families, governments and influential individuals which is not good for competition and mutual development. This is because controlling shareholders often prioritise their interests, which can lead to decisions favouring debt over equity to avoid diluting ownership resulting in high leverage ratios that may increase financial risk during periods of economic instability, whereas minority shareholders may have limited influence, reducing overall firm value maximisation.

There is also the problem of information asymmetry with quite significant gaps in the availability and accuracy of information between firms and investors. The consequence is that investors demand higher returns due to perceived risks, raising the cost of both debt and equity 30

capital while firms may rely heavily on internal funds or short-term debt, limiting their ability to invest in long-term growth. The prevalence of information asymmetry can distort investor confidence and hinder capital market development.

Furthermore, there is the problem of capital market corruption and sharp practices in the day-to-day running of the Nigerian capital market resulting in distorted market efficiency due to the embodiment of unethical practices, and earnings manipulation which are common in the NGX. One of the consequences is the misrepresentation of financial health leads to inefficiencies in pricing securities, making it difficult to attract credible investors. Also, there is mispricing can cause firms to be undervalued or overvalued, disrupting the true relationship between capital structure and performance. Other problems associated with corruption include fraudulent practices which undermine trust in the financial system and limit the ability of firms to access stable funding. These impact negatively on financial decisions such that firms may manipulate financial reports to secure cheaper financing. In the end, they skew capital structure metrics, masking the actual effects of leverage on firm performance resulting in regulatory penalties, harming long-term firm sustainability, raising systemic risks and discouraging both local and foreign investment in Nigerian markets.

Another problem is inconsistent policy changes of regulators and government which plummet on uncertainty and planning challenges. These are often associated with taxation and monetary policies and regulations. In the wake of these, firms in the stock exchange of developing countries face challenges in predicting future tax benefits or interest rates, complicating financial planning and capital structure optimisation. This type of uncertainty may reduce the attractiveness of debt financing due to unpredictable tax shields, limiting firms' ability to benefit from interest deductions. In many practical ways, these impact debt term structure. This is because policy instability often leads firms to favour short-term debt, which is less risky under uncertain conditions. The major effect of this is a growing preference for short-term debt which can create refinancing risks and increase financial distress during economic downturns. This affects firms' ability to undertake long-term investments, thereby constraining growth and performance.

Without evaluating the lack of data synchronisation and poor technological infrastructure one cannot say he has exhausted the development concerns in the capital market in the third world. Lack of data synchronisation and poor technological infrastructure are implicated in terms of research limitations because data inconsistencies and limited access to reliable databases hinder empirical research which affects researchers and policymakers in making informed decisions based on incomplete or unreliable data. The lack of robust data affects the ability to assess the true impact of capital structure on firm performance and tax effectiveness.

Also, errors and inconsistencies in financial reporting reduce data credibility and can be traced to data quality issues which can lead to spurious results in academic research, undermining the validity of findings. Firms may not be able to benchmark their performance accurately against industry peers due to unreliable metrics.

The lack of a specific tax system also hampers the performance of the Nigerian stock exchange. Without unique tax incentives and regulations, it may be difficult for firms to thrive competitively with the global standard. The complexity of Nigeria's tax laws which offer unique deductions and incentives may influence capital structure decisions, implying that firms may adjust their leverage ratios to maximise tax benefits, such as interest deductions. however, the complexity of the tax system may create compliance challenges, increasing operational costs. Then also, there is the issue of tax avoidance and evasion which are common practices among firms in the third world, Nigeria inclusive. The consequences of tax avoidance and 32 evasion constantly show on reported tax figures which may not reflect actual liabilities, thus, complicating the assessment of tax effectiveness in capital structure decisions. In extreme cases, aggressive tax avoidance strategies can reduce firms credibility and expose them to regulatory risks, potentially harming performance.

The NGX's unique characteristics as rooted in its status as a developing market offer insights into understanding capital structure from another perspective and shape the dynamics of capital structure, firm performance, tax effectiveness, and debt term structure. These factors highlight the importance of tailoring theoretical frameworks and empirical methodologies to the Nigerian context. By addressing issues such as limited market depth, policy instability, and data quality, policymakers and researchers can better understand and optimise the financial strategies of firms operating in this complex environment. This, in turn, can foster a more robust and transparent capital market, contributing to long-term economic growth.

## 2.2 Conceptual review.

#### 2.2.1 Capital Structure.

Capital structure is the arrangement and components of a firm's capital as the most important element of business operation which deals with methods of business financing. Capital structure is central to all organisational processes of every company and central to the organizational strategy which relies on capital executed and actualized (Mangku *et al.*, 2021). The different sources of finance which may be integrated into the organisational capital structure have different short and long-term outcomes and consequences on the cost of corporate finance; hence finding a suitable and dynamic mix of funding which forms the capital structure is always of concern to management stakeholders (Hasan *et al.*, 2021).

From the above, Hasan *et al.*'s (2021) contentions on the outcomes of capital structure in corporate financing may be viewed in the light that different tenors require different approaches to capital financing in order to optimize cheaper financing for more production and maximization of profit. In this regard, literature (e.g., Nelson & Peter, 2019; Zhao *et al.*, 2018) is consistent that tenor (short-term, medium-term and long-term) is a major determining criterion for deciding the type of capital structure a firm may adopt especially in respect to which is cheaper and more compatible for the firm culture and performance. Therefore, Hasan *et al.*'s position is accepted as a strong indicator of corporate finance management and determining criteria for an effective capital structure of either debt or equity type of financing organizational goals. This is so because when an organization adopts a financing or capital structure that suits its needs, they may likely achieve success in corporate finance strategy leading to good performance otherwise, such firms may struggle to break even or get into much indebtedness beyond their coping capacity thus affecting their performance negatively (Kieschnick & Moussawi, 2018).

Kieschnick and Moussawi's submission is held as theoretical paradigms in corporate finance or funding requirements in choosing the right capital structure. Not only is the structure of corporate financing important, but it is also critical if the structure is sustaining depending on the nature of the corporate or firm's business or production demands. This position is with Ramli *et al.*'s (2019) organizational financial forecast for corporate effectiveness and performance parameters. This suggests that while certain financial arrangements, like debt financing, can encourage success in the near run, they might not ensure it over the long haul. Equity financing may not be more beneficial in the short-term than debt financing for the management goal. From this standpoint, it could be seen that Kieschnick and Moussawi's contention is an affirmation of Hasan *et al.* (2021) position that organizational effectiveness measure as per production target, profit, goal and achievement may realistically depend a lot on financial management initiatives adopted and implemented in the organization in line with the goals of following such financial policies. Thus, as argued by Ramli *et al.* (2019), if the firm makes a good decision regarding their choice of financing in light of which type of term duration is more beneficial to the organization's production requirements, profit targets and corporate goal attainment, they are more likely to succeed and remain profitable than when this important decision is erroneous. Thus, whatever it is that a firm intends to actualize, they must foremost determine, choose and adopt as policy the most cost-effective method of obtaining capital and finance for their operations is which suitable to their circumstances as their capital structure (Sony & Bhaduri, 2021).

Different firms adopt different approaches to their capital structure, depending on their industry and sector. For example, industries such as mining, petroleum, or extraction may not be comfortable with a high debt ratio, whereas the banking and insurance sectors commonly accept and utilise high debt ratios. Therefore, the type of capital structure that firms adopt should be sensitive to the unique challenges and peculiarities of their respective industries and sectors. It is important to recognise that the financial demands of different industries and sectors may require specific types of capital structure and debt-to-equity mixes. Hence, financial planning and capital structure should be in line with industry and sector standards to avoid the risk of bankruptcy in the long-term.

Sikveland *et al.* (2022) argue that firms should focus on industry and sector financial requirements when planning their capital structure, consistent with existing literature on the impacts of sector and industry on determining a suitable capital structure for corporations. It is common for management to consider financing options that are appropriate for their industry and sector when planning corporate financing and determining the method of financing for their firms. For instance, some industries and sectors are more capital-intensive than others, and some are better suited for debt financing than equity financing. Thus, firms must adopt different approaches to capital planning and structure based on the peculiarities of their respective industries and sectors.

A highly levered organization is one whose debt level is higher than average, while a low-levered organization has a contained debt level. There are limited options available to firms for finding a suitable capital structure for financing their mandates, including selling ordinary shares, issuing equity shares, utilising retained earnings, or borrowing long-term loans. These options can be primarily categorized as debt or equity financing, or as a combination of both in varying ratios and mixes.

Thus, the funding pattern otherwise known as the capital structure generally can be called the mixture of debt and equity management (Ngatno, Apriatni, & Youlianto, 2021) or the blend of term durations beneficial to a firm for financing projects [retained earnings, ordinary and preference shares, etc) adopted by a firm in financing their business and operations (Besley & Brigham, 2008; Van Horne & Wachowicz, 2008), such that the capital structure of a company may be comprised of equity capital or debt or a combination of both (Kirmi, 2017). According to Ngatno, Apriatni, and Youlianto (2021), capital structure has been conceptualised across different contexts and countries by different scholars. In some respects, it is a term used in corporate finance to describe the mix of a company's short-term debt, some long-term debt, and preferred and common equity (Gharaibeh, 2015). Capital structure is a strategic management decision which reflects the level of profitability and returns to shareholders (Shaik, Kethan, Rani, Mahesh, Harsha, Navya, &Sravani, 2022). In line with Shaik et al., Ramli et al. (2019) argued that in acontext the most important element of capital structure is recognizing alternatives to corporate financing and how they may be deployed for the benefit of the organization. The best utility of these options is to take advantage of their peculiar offers to reduce the cost associated with financing, increase productivity and efficiency and improve organizational profit while minimising losses. Ngatno et al. (2021) also conceptualised capital structure as financial plans which capture the risk and return on

investment and financing decisions in view of the available financial options as mentioned by Ramli *et al.* (2019).

Nwala, Gimba, and Oyedokun (2020) noted that the capital structure falls under the ambit of the corporate financial policy of a firm and is affected by a plethora of factors as identified in prior studies. By corporate financial policy, this definition implies the chosen methods adopted by organizations or firms to source the required capital needed for the firm's business and operations. This is determined by the financing footing of the firm, the nature of the business and services and the extent of capital intensiveness. Nwala *et al.*'s definition implies the functional aspect of a firm's financial structure in determining the viability and stability of corporations; it is important to consider a number of values it brings to corporate financial management.

According to Al-Slehat (2020), such values go beyond market price value but generally, it is an important determinant of successful corporate financing because management with a fluid capital structure is more likely to improve their valuation in the capital market as regards shares and securities which the firm has listed. Also, the capital structure ensures proper utilisation and deployment of available finances more efficiently and effectively and at the same time saves the firm from undercapitalization while the firm's profits and returns to stakeholders are more likely to soar if the firm adopts a favourable policy in capital structure reflecting their needs and maximizing their comparative advantage. Equally, the profit of the organization may accrue in different ways when an effective capital structure is implemented. For example, the overall cost of capital may be lowered with the right D/E mix which can increase shareholder's and owner's profits. This is so because without flexibility no capital structure will be efficient and effective. This flexibility is particularly important to reduce the debt capital of firms.

2.2.1.1 Determining Effective Capital Structure.

There are critical factors which determine the efficiency and effectiveness of a capital structure: Some of these factors in the views of Ramli *et al.* (2019, p. 4) are firm-specific attributes which include but are not limited to firm-specific attributes, country-specific attributes and other organizational climate factors as have been under listed:

- a. Structure of the Asset: The structure of the asset is one of the firm-specific attributes which may be defined by two major parameters of collateral and tangible assets. The more tangible assets, the less the agency cost of debt because tangible assets can easily be converted to collateral. This implies that firms with greater tangible assets may favour debt financing at reduced agency costs than others with less. This indicates the relationship between what firms hold as leverage and the structure of their assets which may influence the capital structure and equally financial performance of firms.
- b. Growth opportunity: A company's financial performance is assessed using fundamental metrics including the market value of assets divided by debt and equity, the ratio of the firm's total market value to investors' assessment, and the percentage change in total assets. Higher growth opportunities typically lead to a firm utilising less debt to reduce friction between debtholders and shareholders. In a competitive market, easier access to finance can be an indicator of a firm's growth potential and opportunity, which can guarantee better business performance. As growth opportunities increase, a firm's leverage also tends to increase, leading to a positive relationship between growth indices and financial performance.
- c. Firm size: The size of a firm may be ascertained by judging its total assets and total sales which often also correlates firm's leverage although inversely. While smaller firms are more likely to access bank loans; larger firms may only leverage their capacity to generate

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higher returns on assets and sales leading to higher production values and a positive firm's financial performance.

- d. Liquidity: The liquidity of a firm refers to the balance between liabilities and assets. A firm has good liquidity if its current assets surpass its current liabilities. Good liquidity provides greater leverage, especially for short-term obligations which increase the probability of good financial performance. This provides evidence for a good relationship between good liquidity, firm leverage and the firm's financial performance.
- e. Business risk: There is an inherent risk in every business but when the risks are high, it may affect the financial management of the firm. Business risks may be measured as the average change in the absolute difference between annual per cent differences in earnings before deductions for interest rates and taxation. If the risks are so much that the average change falls steadily, the firm will experience low leverage and will be spending more on debts than equity. This provides a negative relationship among firm risks, firm leverage and firm financial performance within the period under evaluation. The negative relationship aligns with the prepositions of Trade-offers which is hinged on empathy impacts of higher bankruptcy and financial distress risk and supported by Asymmetric information theory on the leverage between less profitable and more profitable firms. Thus, the volatility of earnings influences both leverage and financial performance.
- f. Non-debt tax shield: Tax plays a crucial role in corporate financial management, as corporate interest tax (CIT) often constitutes a significant portion of a company's finances and directly impacts its net earnings. To standardise the non-debt tax shield, organisations may use their operating income as a proxy instead of total assets. This approach is often employed in debt financing as a substitute for a tax benefit, which helps reduce the burden of the paid CIT portion. Companies that enjoy tax benefits or any other form of tax shield tend to have more financial leverage than those that do not, and there is a positive

relationship between organisational leverage and corporate financial performance. This relationship is one of the reasons why tax shield strategies and other tax burden reduction strategies are adopted in corporate financing and organisational management.

There are also Country-specific attributes which could determine corporate capital strategy such as:

- g. Interest rate: Typically, the commercial banks' lending rate (BLR) is used to determine the interest rate that organisations will pay on their loans. When the interest rate is high, it is likely to have a negative impact on the capital structure of the organisation and its ability to manage its corporate finances effectively. On the other hand, when the interest rate is low, firms may be more inclined to borrow money, which can facilitate increased production. Therefore, there is a positive relationship between low-interest rates and the leverage of the organisation, as well as its financial performance, while high-interest rates have a negative impact on the fiscal indices of the organisation (Ramli and Nartea, 2016).
- h. Inflation rate: The value of goods and services is impacted by inflation, which is commonly measured by the annual percentage change in the consumer price index. Price changes are often adjusted by the rate of the GDP to account for inflation. Depending on the economic conditions, inflation can have a positive or negative impact on debt levels, with greater risks associated with higher inflation rates. In times of recession, it is not so much the leverage that is a concern, but rather the growing difficulty of repaying debts. Conversely, during deflation, organizations may experience higher cash flows with fewer risks. When greater cash flows are generated, this can result in increased organisational leverage and improved financial performance.
- i. Economic growth: This statement implies that the capital structure and fiscal requirements of a firm are influenced by certain economic indicators. Specifically, the

level of fixed assets within an economy can be determined by examining the annual gross domestic product and gross domestic investment. This information can help firms make informed decisions about whether to utilise debt or other forms of capital structure that are better aligned with the current economic environment. By considering these factors, firms can better manage their financial needs and optimize their performance. As such, it is important for researchers to examine the relationship between economic indicators and organisational financing decisions in order to develop a deeper understanding of the factors that affect capital structure and firm performance.

j. Stock and bond market development: The financial structure and management of an organization can be affected by fluctuations in stock returns and prices. Depending on whether these changes are positive or negative, firms may choose to adjust their capital structure in response. In some cases, organisations may leverage movements in the stock and bond markets to make informed decisions about their financing strategies, which can impact their level of leverage and financial performance. As such, it is important for researchers to investigate the relationship between stock market movements and organisational financial decisions, in order to better understand the factors that influence capital structure and financial performance.

Other factors include but are not limited to:

k. Costs of capital: In setting a capital structure, the cost of funding from other sources necessarily needs to be low in order to ensure that a firm utilising such capital sources is at the same time generating profit which will guarantee that the incurred cost associated with the capital being raised is paid while maintaining a positive growth index. Although in some instances; the initial cost of capital may not be met by the current profits of the firm; the outlook should be that the profit to be made in the long-term should eventually assuage the cost of the capital and still leave the firm in profit.

- Degree of Control: Another determinant for an effective capital structure is control. The degree of control enjoyed by equity shareholders is an important success factor of effective capital structure. Thus, the type of shareholders and the limit of their voting rights are considered crucial to maintaining a favourable balance between debts and equity contributions to the firm. This goes a long way in influencing the effectiveness the of capital structure of firms.
- m. Trading on Equity: Trading on equity is a key component of an effective capital structure strategy that involves utilising more equity funds to increase returns on new funds. By doing so, the organisation may be able to achieve a higher rate of return on total capital compared to the interest paid on debentures or new debt financing. This approach allows firms to leverage equity financing to their advantage, which can help to optimise financial performance and create value for stakeholders. As such, researchers and practitioners alike need to understand the benefits and potential risks associated with trading on equity, in order to make informed decisions about capital structure and financing strategies.
- n. Government Policies: The government remains the sole regulator of industries, sectors and financial policies which apply in any business environment. Firms whose capital structures align and conform to industry regulations and government policies may likely be effective and successful. Rapid changes in regulations and government fiscal policies may also bring about unprecedented changes in the capital structures of firms and could possibly expose some firms to unmitigated losses.

Equity capital is a form of financing that is provided by shareholders or owners of a firm (Nuryani and Sunarsi, 2020). There are two types of equity financing: retained earnings and contributed capital. Retained earnings are a portion of profits that are kept by the firm for the purpose of strengthening its business or corporate strategy. Contributed capital, on the other hand, refers to the initial investment made by the owners of the firm at the time of its

establishment or finances received from those who have bought shares in the company to become owners.

Regardless of how it is raised, literature (such as Nuryani&Sunarsi, 2020; Ramli *et al.*, 2019; Eriki& Osagie, 2017) consistently highlights the long-term cost-effectiveness of equity financing for corporate organisations. However, it may not be advantageous for short-term plans. As such, it is important for organisations to consider their specific financial needs and goals when deciding on the appropriate mix of equity and other financing options. By doing so, they can optimise their capital structure and financial performance over the long-term.

Another method of capital financing is debt capital which is referred to as capital borrowings from external sources used in business financing. This could be in the form of long-term bonds short-term commercial paper, etc. Long-term bonds are good sources of finance and in most cases are largely seen as the safest type of debt because of their long duration or extended period of payback. Also, the principal and interest are not repaid at the same time. The interest is usually the first part to be repaid whereas the rest of the principal will only be repaid upon expiration of the bond or its maturity. Short-term commercial paper –commercial papers could be long-term or short-term based; short-term is a debt instrument utilised by a firm to raise finance within the shortest period. It is usually an emergency source of financing or finances acting as a backup capital in times of organizational needs.

As previously stated, scholars' opinion converges on the fact that for a firm to actualise effective financing through its capital structure (which may largely deploy a mixture of equity and debt), there is a need for structures to be balanced weighing every circumstance and aiming to reduce the cost of capital. Such balance which is referred to as optimal capital structure may be the beginning of success in organisational financing and corporate strategy. Thus, optimal capital structure is seen by many authors (e.g., Jiang *et al.*, 2019; Antill& Grenadier, 2019) as the perfect mix of debt and equity capital which maximises a company's market value while

reducing its capital cost. The essence of optimal capital structure is to adapt debt and equity finances in a way that prioritises the firm's financial health and leverages that to balance both short-term and long-term financing.

Additionally, research conducted by Morri and Cristanziani (2009), Vătavu (2015), and AL-Najjar and Taylor (2008) has demonstrated that the capital structure is influenced by the firm's size, profitability, growth, market-to-book ratio, risk, tangibility, and liquidity in both developed and developing markets. Shaik et al (2022), using empirical data from India found evidence in support of firm size and growth, while other variables such as liquidity, business risk, tangibility, and non-debt tax shield were not significant. Yet, Scholars also suggest that a firm considers its financial flexibility, tax positions, and level of managerial conservatism or aggressiveness in determining the optimal capital structure. A "trade-off" of the advantages and disadvantages of debt financing is necessary to identify the optimal capital structure, claim Jaisinghani and Kanjilal (2017). The "tax shield advantage" (Kraus & Litzenberger, 1973) is one benefit of debt financing. This is because, in many countries (Jaisinghani and Kanjilal, 2017), the interest paid on debt funds is deducted from earnings, providing a tax shield advantage (M'ng, Rahman, & Sannacy, 2017). As per the statement, the best capital structure for a business may be established by weighing the advantages and disadvantages of financing its operations through debt. One advantage of debt financing is that interest paid on the debt is frequently tax-deductible in many nations, which can reduce a company's tax liability and provide a tax shield advantage. This means that using debt to finance a company's operations can be beneficial in terms of reducing the overall tax burden and increasing profits.

Upon incorporating the tax shield advantage into the "irrelevance theory," Modigliani and Miller (1963) first advocated for this stance. Economic risks like insolvency and liquidation expenses are also present when a company uses debt financing. As stated by Ross, Westerfield, and Jaffe (2005), the main objectives of choosing an ideal capital structure are to maximize shareholder wealth and minimise the weighted average cost of capital. Therefore age-long studies by Baxter (1967); and Kraus and Litzenberger (1973) arguably state that firms can optimise their capital structure from a trade-off of the tax saving advantage versus the bankruptcy and liquidation costs of debt financing. This is also consistent with Ross, Westerfield Jeffrey, and Jordan (2007) who argued the need to achieve optimality by balancing the marginal benefits of the two.

A discrepancy between the ideal and actual capital structure may arise due to operating conditions from the external environment, but M'nget al. (2017) state that the dynamic trade-off theory is focused on the patterns of capital structure adjustment, whereby an adjustment happens when the cost or value of deviations from the target capital structure exceeds the cost of adjustment towards that target. Therefore, various studies have illustrated the responsiveness of the company's capital structure to macroeconomic factors (Huang & Ritter, 2009; Covas & DenHaan, 2007; Korajczyk & Levy, 2003). The optimal capital structure is thereby determined from a trade-off analysis (Uremadu & Ogbu, 2019). The authors further noted that the volume of debt enveloped in this ideal capital structure is seen to be the 'debt capacity'. Debt financing simply entails obtaining funds from parties external to the business organisation, such as financial institutions or via the sale of bonds.

This form of financing may be subdivided into two groupings: long-term debts which are incurred for a period usually exceeding an 'accounting cycle or fiscal year' and are often used for capital-intensive projects such as property, plant and equipment and short-term debts are normally incurred for a shorter period and are mostly used to finance daily activities, such as the purchase of raw material, staff salaries and wages, inventory, etc. They are usually repaid within an accounting cycle or fiscal year.

Various authors across several countries have studied the firm performance and capital structure nexus, documenting mixed or varied findings. Mardones and Cuneo (2020) using

empirical data from Latin America found no significant relationship between capital structure and firm performance proxied as Return on Equity and Return on Assets. And in contrast, Ngatno, Apriatni and Youlianto (2021) using empirical data from Indonesia found that longterm debt had a negative effect on RoA and ROE; a situation also consistent with Das, Chowdhury, and Islam (2021), using data from Bangladesh showed a negative relationship between financial leverage and firm performance. The negative relationship was also seen in studies in Africa, e.g., Omondi and Muturi (2013) using empirical data from Kenya found a negative significant relationship between capital structure and financial performance. However, Gill, Biger, and Mathur (2011), found a positive effect of short and long term debt on profitability; this relationship was also confirmed using the total debt as a proxy. The metaanalysis conducted by Thi, Dao, Dieu, and Ta (2020), summarised the empirical literature and discovered that of the entire studies included 63 found a positive effect, while seventeen showed evidences of a negative effect. The meta-analysis also showed that of the entire sample, 65 showed non-significant effects.

In the realm of corporate finance, there are various approaches to sourcing capital as an input resource for driving organisational processes. The capital structure of a firm defines the aspects of financing that emanate from a dynamic of external and internal funds which may be in the form of equity, borrowings, loans, debt, or externally financed shares (Mangku *et al.*, 2021). Firms across all industrial sectors require funds for production and investment, especially for expansionist projects, and in most cases, cannot fund all projects and investments while breakeven is achieved. This leads to financial deficits that test the competence of global competitors and organisational performance (Chugunov and Makohon, 2019; Edo and Okodua, 2021). The management of financial deficits has become an inevitable part of modern-day private sector fiscal operations, and it is best managed through dynamic medium and long-term capital planning and structuring to ensure that the fiscal mandate of organisations remains within acceptable standards for organisational health (Akingunola, Olawale and Olaniyan, 2018).

The capital structure may best be understood in the bearing of three major perspectives for fiscal planning and management. (i) Firms typically project their capital needs for the short, medium, and long terms, with short-term projections covering annual expenditures, medium-term projections covering 3-5 years, and long-term projections covering 10-15 years (Mangku et al, 2021). Akingunola *et al.* (2018) argue that each term's planning should be guided by the firm's financial policies, which may include equity infusion, borrowings/loans, debts, calls for shares, and other relevant avenues within the limits of the law. (ii) Firm's ratio of internal to external financing which is different from the retained earnings. (iii) Firm's policy regarding the method of external financing and borrowing and how much needs to be raised through investors such that firm's decision regarding the use of externally financed capital as reinvestments, stocks and termed debt.

To achieve the right financing mix, companies need to have an effective budgeting procedure that prioritises critical investments with positive net present value in line with the net present value theory of growth (Hering, Olbrich, and Rapp, 2021). The importance of these financial parameters determines business success because finance is an irreplaceable organizational resource. With a healthy capital structure, organisations can make good investment decisions guided by two major approaches: debt and equity financing. Effective capital structure maximises the value of the organisation through expert management of funds (Mbonu and Amahalu, 2021). The main aim of capital structure is to minimise the cost of funds while maximising their value. To achieve this, organisations need to evaluate internal and external factors linked to their value and profitability. Capital structure focuses on the net cost and net values of all financial planning and decisions made by an organisation. When fiscal policies and decisions are right, shareholders' wealth increases, and

organisational profitability potentials increase (Mbonu and Amahalu, 2021; Liu, Wujun, and Chen, 2021).

When considering the capital structure of private sector firms, there are several congruent factors to keep in mind, such as the firm's profitability goals, operational size, forecasted growth, level of liquidity and tangibility, tax protection on non-debt liabilities, and market volatility. Omojolabiet et al. (2019) argue that firms typically align their capital structure with the factor that best defines their growth projections, profitability, and organisational values or utilise a dynamic of factors to find a suitable blend depending on their organisational peculiarities. This dynamic approach to the capital structure has multiple benefits for financing, as firms can exploit all advantageous fiscal avenues for the benefit of the firm. By using a dynamic approach, firms can access the shortest and easiest route to optimality (Mbonu and Amahalu, 2021). The path to optimality for a firm is unique to factors such as age, sales, growth, leverage, liquidity, dividends, market share, balance sheet factors, operating policy, and operating expenses, among others (Al-Slehat, ZA firm). The firm's capital structure allows investors to invest their current assets to obtain the capital required to keep the firm's operations afloat and balance their short-term financial obligations. This is crucial for boosting creditors' confidence and motivating lenders in a way that enhances effectiveness. In this study, the researcher focuses on the debt-to-equity ratio and how it affects firm performance, considering the terms structure of debt.

Hence, if a capital structure is good, it is because its primary focus is well utilised and balanced as it concerns corporate financing regarding cash flow policy; either earmarked as pegged for the fulfilment of debt obligations and a residual accruing to shareholder's equity (Wang et al, 2020). Here the importance of debt-to-equity financing is buttressed within the

framework that allows organisations to plan in the long-term the structures they would use to maximise their capital.

Debt capital structuring involves raising funds for an organisation's operating capital and recurrent expenditure by selling corporate bonds, trade bills, or notes to individual, organisational, or corporate investors. This makes the organisation a debtor, with the investors becoming creditors who receive the initial capital and interest repayment (Cornut St-Pierre, 2019). However, convincing the general public, consisting of both individuals and corporate investors, to invest in a firm's bonds or treasury notes can be challenging. This is due to factors such as low levels of literacy and education, which makes it difficult for investors to trust the firm. Nevertheless, historical periods of low prices and promising high profits and dividends may make investing in debts attractive to individuals or corporate investors. Additionally, there is a tax advantage associated with debt financing, whereby the issuing organisation can deduct interest or earnings from debt financing from the taxable part of the overall income tax, which is beneficial to the firm or corporate organisation.

Equity financing allows individuals or corporate organisations to hold stakes in a company by purchasing shares or stocks when the company officially declares the sale of shares as equity rights (Wang et al, 2021). Through this process, companies raise finances by selling shares, while individuals obtain equity stakes in these companies. Besides capital, quasi-equity instruments such as stock, convertible stock, and equity units such as common shares and warrants may also be raised through the sale of common organizational equity. Equity financing is crucial in shielding firms from loan repayment burdens, issues surrounding creditworthiness, loss control mechanisms, and potential conflicts that may arise. Therefore, the capital structure should be a dynamic mix of both equity and debt

management. This approach not only yields tangible capital structure but also enables financial experts to maximise key operations asset sets acquisition.

ROA is a critical component of corporate and organizational finances in the dynamic mix of equity and debt management. Assets are valuable resources to an organization as they can be easily converted into capital or other organisational values. The value of assets is calculated by dividing net income by the average total assets of the company. ROA is an indicator of how efficiently a company is using its assets to generate profits. ROE serves as an internal performance measure of shareholders' value, directly assessing the financial return on a shareholder's investment. ROE is calculated by dividing net income by average total equity. Firms that adopt the paradigms of this theory set a target debt-to-value ratio and gradually attempt to achieve it.

## 2.2.2 Tax avoidance

Tax is a liability that reduces the distributable profits of a company (Dang & Tran, 2021). Taxable income is calculated in line with the guiding rules of the statutory tax authority in a particular state/county/country (Chytis, 2019). The determined amount of avoided tax forms the basis of income tax to be levied. Corporate tax avoidance can be seen as "the downward management of taxable earnings via tax planning undertakings" (Lanis& Richardson, 2012, p. 86) which Bird and Davis-Nozemack (2018) labelled a 'willful circumvention of tax laws aimed to reduce the size of payable tax liability' of a firm. Legally, tax avoidance is different from tax evasion which is an intentional and illegal activity to avoid payment of statutory tax by an individual or firm (Wang *et al.*, 2020). Within this legal perspective, Kim and Im (2017) contend that tax avoidance is any form of reducing tax-due income which does not attract additional fines or surcharges from the investigation. In the views of Desai and Dharmapala (2009) and Wilson (2009), this implies that a good tax

avoidance technique will be premeditated and planned (Armstrong *et al.*, 2012), by the tax management team of the organization (Minnick &Noga, 2010) to ensure successful financial benefit to the firm. The crux of the issue is that tax avoidance can never arise from legitimate actions aimed at reducing the tax liability clearly or expressly within the confines of the law (Prebble & Prebble, 2010). The authenticity of a company's tax position is solely the responsibility of the company (Lee, Dobiyanski, & Minton, 2015); however, there is no flawless *ex-ante* difference between legal and illegal tax avoidance practices. Studies have shown that firms usually employ one or more of the following tax avoidance tools, such as inversions, transfer price manipulations, and tax havens, etc. to maximise global profits (Bird & Davis-Nozemack, 2018; Chen *et al.*, 2010). Most tax avoidance intends to accomplish payment of lower than normally expected tax by exploiting loopholes in the tax laws; paying taxes on incomes declared in a nation other than where they were earned; and, delaying tax avoidance is something that has always existed in the private sector and has greatly evolved legally with managerial empire-building (Shams, Bose, & Gunasekarage, 2022).

Heitzman and Hanlon (2010) utilised a continuum to classify various ways and strategies to avoid tax according to the perceived degree of legality surrounding it. This ranges from tax saving, e.g., municipal bond investments (legal) to aggressive tax practices, such as tax shelters/havens (illegal). Based on this, Lisowsky, Robinson, and Schmidt (2013) identified five proxies over this continuum, including Generally Accepted Accounting Principles (GAAP), cash effective tax rate, permanent book-tax differences, discretionary permanent book-tax differences, and reportable transactions. More so, companies take part in strategic tax planning activities by utilising their overseas counterparts (e.g., Amazon, Google, Starbucks, etc.) subject to favourable tax regimes. This is frequently utilised by Multinational Corporations (MNCs) to shift worldwide income. Wang, Xu, Sun, and Cullinan (2020, p. 796)

observe that corporate tax avoidance is a two-fold function of the financial and CSR (corporate social responsibility) incentives. The authors identified the incentives for tax avoidance to range from financial (Desai & Dharmapala, 2006) to social responsibility concerns (Sikka, 2010; Slemrod, 2004).

Research works on the nexus of tax avoidance measures and company performance have shown mixed findings. Delgado, Fernández-Rodríguez, and Martínez-Arias (2018) note that the bulk of research works have reported a positive relationship or connection between ETR and RoA. In contrast, Huang, Gao, and Chen (2013) established a negative relationship in China, and studies by Noor, Bardai, and Mastuki, (2008), Noor, Mastuki, and Syazwani(2010) showed the same for Malaysian companies.

The ETR has been extensively utilised in prior works as an indicator of tax aggressiveness or avoidance by the firm. The variance between the ETR and statutory corporate tax rates is due to the different measurements of items under financial accounting and tax rules (Wang, Xu, Sun, & Cullinan, 2020). In addition, such differences may be caused by temporary and permanent differences (Wang, Xu, Sun, & Cullinan, 2020). The two procedures of ETR are cash ETR and GAAP ETR. Cash ETR is computed as cash taxes paid divided by pre-tax accounting income. GAAP ETR is computed as income tax expense divided by pre-tax accounting income (Rego, 2003; Hanlon &Heitzman, 2010). The difference between the measures is the numerator of the cash ETR. Wang, Xu, Sun, and Cullinan (2020) observe that the difference between the income tax expense and taxes paid is due to transitory modifications. Both imply in principle, the marginal tax rate. To ascertain the marginal tax rate, there is a need to review the rate of the company's last income change to obtain the actual percentage of taxes on the firm's taxable income (Wang *et al.* 2018). In this regard, it should be taken into consideration that certain factors lead to the differences observable in marginal and effective

tax rates, although, proper tax planning may reduce taxes which are payable by the company not just in a financial year but over a longer lifespan of the company (Monterrey-Mayoral & Sanchez Segura, 2017).

Also, taxes may be paid after the financial or fiscal year in which case, the cash flow after taxes (CFAT) helps in this perspective (Wilde & Wilson, 2018). CFAT measures those aspects of organizational fiscal performance which support the operation's cash flow viability of the firm. This may be ascertained by re-integrating and adding all non-cash charges which may have been deducted as restructuring costs, impairments, amortisation and depreciation from the profit after tax (PAT) otherwise known as the net income (Fernández-Rodríguez, 2021). This process may be regarded in accounting as after-tax cash flow (ATCF). The size of investments or projects carried out and operated by corporate organisations may be ascertained by the size of CFAT which reveals the firm's fiscal health and financial performance over time both among corporate firms competing in the same industry and those in allied industry. In the views of Fernández-Rodríguez *et al.* (2021), given the level of cash flows, earnings may be manipulated or may be subject to adjustable criteria because there are options when it comes to account presentations and tax regulations applications. Thus, accounting outcomes and tax implications are therefore taken into consideration because the use and application of each alternative and decision have tax consequences.

With differed liabilities, ETR takes cognizance of varying approaches which may be employed in earning management as an important aspect of managing CIT. Many components of CIT have to bear on how earnings are adjusted given deferred tax assets and liabilities (Wang *et al.*, 2016), income tax expenses which may be deferred (Ifada & Wulandari, 2015), book-tax differences and deferred tax provisions (Fernández-Rodríguez & Martínez-Arias, 2015).To generate deferred tax assets and liabilities, Wang *et al.* (2016) contended that the CIT may be delayed or paid in advance which ensures the management of earnings using deferred items which is a new approach that is more discretionary than the conventional methods of accruals. This method is typically effective when applied by individual firms within their own organisational circumstances and peculiarities in complement to other techniques and approaches to earning measurement and assessments.

The CIT expense mirrors the 'total, long run, tax payments linked to the recent year's income', irrespective of when the tax is, was or will be paid (Wang, Xu, Sun, & Cullinan, 2020, p.797). However, the cash ETR is only a reflection of the actual tax payments made in the present financial year. BTDs refer to the gap between pre-tax incomes, as shown in a company's published financial statement, and the taxable incomes reported to tax authorities (Tang, 2006). BTDs are mainly caused by differing local GAAP and tax treatment of revenue and expense items (Harrington, Smith, &Trippier, 2012).

Other factors which affect ETRs borne by organisations and corporate entities were articulated by Fonseca-Diaz *et al.* (2019) as OECD members, the extent of economic evolution and development and the robustness of the institutional implementation. Hence the extent of ETR is not organisation dependent but also institutionally determined especially in emerging economies such as Nigeria. The place of the statutory tax rate (STR) and development index typically weld influencing factors on tax factors and corporate techniques for reducing tax rates. STR has an effect because it is set as legal rates and varies from one country to another in accordance with countries and industry specifics. For example, the stability of STR may enable firms' and corporate organisations' tax planning and strategies towards ETR or the practices of tax avoidance aimed at reducing the burden of corporate income tax.

Increases and drops in STR have economic outcomes and may likely inform the corporate decision on CIT measurement management. The figure below provides a description of the

research framework of corporate tax avoidance research in the mainstream literature (Wang *et al.*, 2020).



Figure 1: The research framework for corporate tax avoidance Source: Wang et al. (2020).

The study by Singh (2016), using empirical data from Oman found that non-debt tax shields a surrogate for corporate tax avoidance had a positive non-significant effect on leverage. Taxes are the legal obligations of firms and organisations to the government. In income taxation, a part is set aside as accruals to the government in line with regulatory policies. Despite the legal and moral backing of taxes, tax constitutes a fiscal challenge to firms in relation to the operating environment (Hasan et al, 2021). This challenge has different impacts on different levels of organizations in accordance to the age of the firm, the operating

requirements, their capital structure, sales, growth rate, leverage, market share and financial liquidity (Cornut St-Pierre, 2019). Most startups have the daunting task of remaining afloat under tax obligations. In this instance, most firms seek out legal means of either reducing parts of their tax obligation or the whole in accordance with the business laws of the operating environment (Miller, 1977). Tax avoidance as a legal means of reducing tax obligations may take the form of different approaches, notably such as tax shelters and tax havens.

In tax shelters, a firm seeks a mathematical principle that applies in the operating environment which allows for a reduced or zero tax payment (Wang, Wang, Zhang and Yu, 2021) for instance; it is a legal practice for offshore firms to establish subsidiaries in countries with less or zero tax demands and originate the purchases from their subsidiaries after their subsidiaries have purchased from the parent company at reduced or zero tax rates. This type of shelter protects their main companies from full tax obligation wherein they purchase from their subsidiaries at the same or slightly different rates they sell to their public thereby quoting a smaller or no income on the item. Most tax shelters may also require the operating organisation to fulfil certain prior conditions as a means of qualification or as evidence that the tax regime applies to their organisations.

Most of the tax conditions for qualification of tax shelters are usually manipulated in the favour of the initiating firms to help them avoid a certain percentage of tax or all of it (Nisha and Rifat, 2019). There is also a non-debt tax shield which is revenue, operating income or denoted as earnings before interest and tax. In this respect, the use of operating income instead of total assets may serve as a form of tax shield depending upon debt management principles obtainable within the corporate policies (Nisha and Rifat, 2019). Through this means, the tax burden which grossly affects corporate finance and performance may be ameliorated. In order for firms or organisations to be superb, they must find a balance between the burden of tax and the management of organisational capital. Another prominent method of tax avoidance is through the use of tax havens. Many companies usually foreign subscribe to this. Tax heaven is usually marked with a tax regime that has a low effective tax obligation for foreign investors and other considerable sectors for the indigenous firms deemed as a way of attracting investment and development in the sector (Temouri et al, 2021). Tax regimes are ideally tax havens if they have low rates and low fiscal or financial secrecy with operating accounting and banking institutions.

2.2.3Term Structure of Debt.

# 2.2.3.1 Meaning, definition and Measurement.

The term structure of debt is a debt instrument in financial management which is an important dimension of capital structure and firm financing as it relates to performance. The term structure of debt refers to the pattern of maturities of a firm's outstanding debt, including short-term and long-term debt obligations (Myers, 1977). The term structure of debt describes how a firm's borrowing is spread across different maturity dates and can be an indicator of the firm's risk profile (Chava& Roberts, 2021). The term structure of debt reflects a firm's financing decisions and is influenced by various factors, such as interest rates, borrowing costs, and the firm's financial health (Cai *et al.*, 2020). The term structure of debt can be represented graphically using a yield curve, which plots the yields of debt securities against their maturities (Ang *et al.*, 2021).

According to Anyanwu *et al.* (2021), the term structure of debt as a financial instrument can be conceptualised in terms of the debt-to-equity ratio which may be utilised as a common measure of a company's outstanding debt. It compares the total amount of debt a company has to its total equity. Studies have shown that companies with high debt-to-equity ratios tend to have lower profitability and financial stability (Anyanwu *et al.*, 2021). Hence, the term

structure considers the duration of the utilisation of funding applications to determine suitability in line with the sector and industry demands. This can also be determined by the nature of the organisational financial operations and available sources of financing.

Another important area to be considered while defining term structure is the financial risks thereto it and its cost. The structure of debt can affect a company's financial risk. According to Adelowokan *et al.* (2021), companies with high levels of debt are more exposed to financial risk, particularly during economic downturns. This also affects the interest coverage ratio which measures a company's ability to pay interest on its debt. Companies with high-interest coverage ratios are considered to be less risky investments, as they are more likely to be able to service their debt (Oyinlola & Olufemi, 2021).

Debt maturity is an important aspect in conceptualising the term structure of debt because. The maturity of a company's debt can affect its financial performance. Companies with long-term debt may have lower interest rates, but they are also more exposed to interest rate risk (Aderinto& Adeyemi, 2020). Equally, the term structure is critical in determining the debt service coverage ratio. The debt service coverage ratio measures a company's ability to service its debt. Companies with high debt service coverage ratios are considered to be less risky investments, as they are more likely to be able to service their debt (Adegbie *et al.*, 2021).

Furthermore, Oyinlola and Olufemi (2021) contend that the term structure provides the financial standing of the firm in terms of creditworthiness. According to Oyinlola and Olufemi, a company's credit rating can be affected by its structure of debt because companies with high levels of debt are often considered to be higher risk investments and may have lower credit ratings. Moreover, the structure of debt can affect a company's cost of capital. Companies with high levels of debt may have a higher cost of capital, as they are perceived to be more risky investments (Anyanwu *et al.*, 2021). The nature of a firm's cost of capital determines its true 58

leverage. Thus, the structure of debt can affect a company's leverage, which is the degree to which a company uses debt to finance its operations. Companies with high levels of leverage are more exposed to financial risk (Adegbie *et al.*, 2021).

2.2.3.2 Factors Determined by the Term Structure Debt.

A firm's financial flexibility can be affected by the term structure of debt as it determines the timing and amount of cash outflows required to service its debt (Bhanot *et al.*, 202). This financial instrument is important in determining a firm's risk profile, as a higher proportion of short-term debt can increase refinancing risk, while a higher proportion of long-term debt can increase interest rate risk (Chava& Roberts, 2021).

Also, the cost of capital of a firm is a congruent of many factors, especially the term structure of debt; this is because long-term debt may have a higher cost of capital due to higher interest rate risk (Myers, 1977). A firm's ability to take advantage of investment opportunities can equally be influenced by debt instruments, especially regarding its structure, thus, a higher proportion of short-term debt can limit a firm's financial flexibility and restrict its ability to raise additional capital (Myers, 1977). This instrument (term structure of debt) is also associated with a firm's credit rating, as a higher proportion of long-term debt can improve a firm's creditworthiness due to reduced refinancing risk (Chava& Roberts, 2021). It is worth noting that the term structure of debt can vary across industries and countries, reflecting differences in financial markets, regulatory environments, and economic conditions (Iqbal *et al.*, 2021). Considering that a firm's pattern of maturities of a firm's risk profile and financial flexibility. This is supported by various theories which attempt to explain the relationship between the term structure of debt and firm performance.

Financial theorists suggest that firms choose a mix of short-term and long-term debt to balance the advantages of lower borrowing costs associated with short-term debt against the advantages of reduced refinancing risk associated with long-term debt (Myers, 1977). For example, the pecking order theory suggests that firms prefer to use internal funds first, followed by debt, and then equity, in that order. The pecking order theory implies that firms will use short-term debt before long-term debt because short-term debt is less costly and less risky than long-term debt (Myers and Majluf, 1984). The impact of the term structure of debt on firm performance is complex and depends on various factors, such as the firm's industry, size, and financial health. While some studies suggest that a longer-term debt maturity structure is beneficial for firm performance, other studies suggest that a more balanced maturity structure may be optimal.

The ratio of debt and equity in a company's capital structure informs their term structure and it is an important concept in corporate financing which affects a firm's financial stability, flexibility, and performance. The choice of debt maturity structure can impact a company's risk profile and financial performance, making it crucial for companies to consider carefully when making financing decisions. Thus, the ratio of debt and equity is crucial in corporate financing, as it encompasses the maturities of a company's outstanding debt, including both short-term and long-term debt obligations. Factors such as the cost of borrowing, interest rate expectations, and financial health can influence a firm's term structure of debt. For instance, Iqbal *et al.* (2021) found that companies with higher financial distress often rely more heavily on short-term debt, possibly due to limited access to long-term debt markets. Conversely, companies with stronger financial positions may have more flexibility in selecting their debt maturity structure.

The term structure of debt also affects a company's risk profile and performance. According to Chava and Roberts (2021), companies with a higher proportion of long-term debt tend to have
lower default risk and higher profitability compared to companies with a higher proportion of short-term debt. Long-term debt can offer greater financial stability and decrease refinancing risk. As a result, the term structure of debt is an essential consideration in corporate financing that can influence a company's financial flexibility, risk profile, and performance. The debt structure of a company can has significant implications for its financial performance, particularly in the manufacturing sector in Nigeria (like other developing economies), where financing can be a major challenge.

# 2.2.3.3 Determination of term structure of debt (Optimal Allocation).

There are other financial factors which are important in defining the term structure of debt. These are equity dilution, financial flexibility, capital structure, and agency cost of capital. The structure of debt can affect a company's equity dilution; this is typical because companies that rely heavily on debt financing may need to issue more equity to raise capital, which can dilute the ownership stake of existing shareholders (Adelowokan *et al.*, 2021). Except for such companies enjoying financial flexibility, they may soak up the high cost of finance. Therefore, the structure of debt can affect a company's financial flexibility. Companies with high levels of debt may have less financial flexibility, as they may have less cash flow available to invest in growth opportunities (Oyinlola & Olufemi, 2021).

Firms can uniquely take advantage of financial flexibility to determine the nature of their capital structure in order to optimise their debt-to-equity mix as sources of financing. These are also internal leveraging factors that can help them maximise the value of their financial options (Adegbie *et al.*, 2021) and can also reduce the agency cost which may be associated with performance disagreement between management and their stakeholders (Anyanwu *et al.*, 2021).

The relationship between the term structure of debt and firm performance has been the subject of extensive literature research. Some studies have found a positive relationship between the structure of debt and firm performance. For instance, Oyinlola and Olufemi (2021) and Adegbie *et al.* (2021) found that firms with higher levels of long-term debt have better performance in Nigeria. On the other hand, some studies have found a negative relationship between the structure of debt and firm performance. Anyanwu *et al.* (2021) found that a high level of debt is associated with lower firm performance in Nigeria. Adelowokan *et al.* (2021) also found that companies with high levels of debt have lower profitability in Nigeria.

In addition, the relationship between the term structure of debt and firm performance may be contingent on other factors such as industry characteristics and economic conditions. Aderinto and Adeyemi (2020) found that the relationship between debt maturity and firm performance is influenced by industry characteristics in Nigeria. The relationship between the term structure of debt and firm performance is complex and varies depending on the context. While some studies have found a positive relationship, others have found a negative relationship or no significant relationship at all. For instance, a study by Bhanot *et al.* (2021) found that a longer-term debt maturity structure is associated with higher firm value, lower financial distress, and lower bankruptcy risk. Also, Chakraborty and Yang (2021) found that firms with a more balanced maturity structure (i.e., a mix of short-term and long-term debt) tend to have higher profitability and lower default risk than firms with a more skewed maturity structure. However, not all studies have found a positive relationship between the term structure of debt and firm performance. For example, a study by Chen *et al.* (2019) found that firms with a longer-term debt maturity structure tend to have lower profitability, higher default risk, and lower firm value.

Another study by Cai *et al.* (2020) examined the impact of interest rate expectations on the term structure of debt. The study found that when firms expect interest rates to rise in the future, they are more likely to issue long-term debt to lock in lower borrowing costs. Conversely, when firms expect interest rates to fall, they are more likely to issue short-term debt to take advantage of lower borrowing costs in the future. In a study by Al-Nuaimat *et al.* (2020), the author examined the impact of debt maturity structure on firm performance: evidence from Jordan and found that firms with longer-term debt have higher profitability and better financial performance than those with shorter-term debt. However, the sample size is limited to only twenty firms from Jordan, which may not be representative of the larger population. This finding supports the importance and critical role of a type of finance on a firm's performance especially regarding the term structure of debt.

Also supporting this relationship, Ali *et al.* (2021) evaluated this claim while investigating "Debt Maturity, Risk and Performance: Evidence from Pakistan" Ali and Co found a positive relationship between long-term debt and firm performance, but a negative relationship between short-term debt and firm performance. However, the sample size is small and only includes firms in Pakistan, which may limit the generalisability of the findings.

Furthermore, Li *et al.* (2021) found evidence in China which supports the relationship between "Debt Maturity, and Corporate Performance Their study found that firms with longer-term debt have higher profitability and better financial performance than those with shorter-term debt. However, the sample size is limited to only 77 listed firms in China, which may not be representative of the larger population. In Nigeria, Saka *et al.* (2020) explored the impact of debt structure on financial performance: evidence from Nigerian firms and equally found a positive relationship between long-term debt and firm performance, but a negative relationship between short-term debt and firm performance. However, the sample size is small and only includes firms in Nigeria, which may limit the generalisability of the findings. In the United States of America, Zhou *et al.* (2021) while examining the impact of capital structure on firm performance: evidence from the United States found a negative relationship between the debt-to-equity ratio and firm performance, indicating that firms with high levels of debt have lower profitability and financial performance. However, the sample size is limited to only 50 listed firms in the United States, which may not be representative of the larger population.

2.2.3.4 Nature of capital structure in developing economy (Nigeria)..

The nature of capital structure and its consequences on corporate performance in developing economies is distinct from that of developed economies due to several peculiar factors.

One of the factors is the underdeveloped financial markets in developing economies, which limit the availability of long-term financing options, such as bonds and long-term loans. As a result, firms in developing economies rely more heavily on short-term loans and trade credits to finance their operations, leading to higher debt levels and liquidity risks (Boubakri *et al.*, 2021). This situation is unfavourable to firms as it impacts the performance parameters negatively. This is because underdeveloped financial markets in developing economies like Nigeria can significantly impact the capital structure of firms, as evidenced by the debt-to-equity ratio. When long-term financing options are limited, firms face challenges in accessing capital for investment and expansion. The scarcity of long-term financing alternatives forces companies to rely heavily on short-term debt or equity financing, resulting in higher debt-to-equity ratios.

More so, with limited long-term financing options, firms may resort to short-term debt instruments such as bank loans or trade credits, which typically have higher interest rates and stricter repayment terms. The increased reliance on short-term debt can lead to higher debt levels and a higher debt-to-equity ratio. Moreover, the lack of available long-term financing options hampers firms' ability to secure funds for large-scale projects with longer payback periods, restricting their growth and investment potential. Additionally, the limited availability of long-term financing options can impact equity financing. Investors may be hesitant to invest in firms in underdeveloped financial markets due to the higher risk associated with uncertain economic conditions and limited exit options. Consequently, firms may struggle to attract equity investments, forcing them to rely more on debt financing to meet their capital requirements. This further contributes to a higher debt-to-equity ratio, indicating a higher proportion of debt relative to equity in the capital structure.

In developing economies, lack of access to finance is another challenge to corporate finance; firms face difficulties in accessing finance due to a lack of well-functioning financial systems, weak institutional frameworks, and a lack of collateral. As a result, firms rely heavily on internally generated funds and may have limited access to external financing, leading to suboptimal capital structures (Amidu & Abor, 2018). In relation to the impacts of DER on performance indices of a firm in the presence of an effective tax rate, it is struggle with lack of access to finance is a negative indicator because; limited access to finance means that firms face challenges in obtaining both debt and equity capital to finance their operations and growth. As a result, firms may resort to alternative sources of funding, such as informal or unregulated lenders, which often charge higher interest rates and impose stricter repayment terms. This reliance on expensive and short-term financing options can lead to an increase in the debt-to-equity ratio as firms accumulate more debt relative to their equity.

Furthermore, the lack of access to finance hinders firms' ability to invest in long-term projects and expand their operations. Without sufficient capital, firms may be unable to acquire necessary assets, upgrade technology, or undertake research and development initiatives. The limited investment capacity reduces the firm's potential for growth and profitability, ultimately affecting its capital structure. Firms may have to rely on internal resources or delay investment plans, resulting in a higher proportion of debt in their capital structure and a higher debt-to-equity ratio.

Currency devaluation is also a problem. Corporate finance may experience challenges because of currency fluctuations which can affect the capital structure of firms. For example, firms with a high proportion of foreign currency debt may face financial distress due to the devaluation of the local currency, leading to higher borrowing costs and negatively impacting their performance (Nawaz & Tariq, 2021). Sadly, the naira has lost value in recent times in relation to the economic realities of Nigeria leading to a decrease in the domestic currency value relative to foreign currencies. This devaluation affects firms that have taken on foreign currencydenominated debt or have operations involving foreign currencies. The devaluation increases the burden of servicing foreign currency debt, as the repayment obligations become more expensive in domestic currency terms. Consequently, firms may experience higher debt levels, leading to an increase in the debt-to-equity ratio.

Moreover, currency devaluation can impact firms' ability to access new debt financing. Lenders and investors may become more cautious about extending credit or investing in a devalued currency environment due to increased exchange rate risk. This limited access to debt financing can further affect the capital structure of firms, potentially leading to a higher reliance on equity financing. Firms may seek to raise capital through equity issuances to mitigate the risks associated with foreign currency debt and reduce their debt-to-equity ratio.

Another factor is political instability. Political instability in developing economies can affect the capital structure of firms. Uncertainty in the political environment can lead to a lack of investor confidence, leading to a decrease in the availability of external financing. This can negatively impact the firm's capital structure and performance (Khan, Nadeem, & Khan, 2021). This also poses significant risks to firms operating in these markets as it can lead to higher borrowing costs and a preference for equity financing to reduce financial risk (Nyasha & Odhiambo, 2021). This is so because the consequences of political instability are far-reaching for firms; realistically, uncertain political conditions in Nigeria have led to economic volatility, which in turn affected firms' access to financing and investor confidence with overall negative performance outcomes. For instance, the lack of stability and predictability in the political landscape of Nigeria deter both domestic and foreign investors, making it more challenging for firms to attract equity investments. As a result, firms may rely more heavily on debt financing to meet their capital needs, leading to an increase in the debt-to-equity ratio.

Similarly, Nigeria's political instability disrupts the functioning of financial markets and institutions, affecting firms' access to debt financing. Banks and other financial institutions may become more risk averse during times of political uncertainty, leading to tighter lending conditions and higher borrowing costs. This limited access to affordable debt financing can prompt firms to resort to alternative sources of funding, such as expensive short-term debt or even informal channels. Consequently, the debt-to-equity ratio of firms in Nigeria may rise as they accumulate more debt relative to equity to sustain their operations and navigate through the challenging political environment.

Moreover, cultural factors and informal institutions, such as family ties and social networks, influence the financing choices of firms in developing economies. For example, in some cultures, debt financing may be viewed negatively, leading to a higher reliance on equity financing. This can lead to suboptimal capital structures and negatively impact the performance of firms (Nawaz & Tariq, 2021). For instance, family-owned firms may prefer to rely on internal financing or debt financing from family members, rather than seeking external equity

financing (Gul & Hussain, 2020). Considering the influence of DER on performance and term structure of debt and its moderation by ETR, cultural factors and informal institutions may also affect it. This assertion is premised on the fact that cultural norms, beliefs, and practices can impact the preferences and behaviour of individuals and businesses in the financial realm. In Nigeria, cultural factors such as a preference for personal relationships and trust-based networks can influence firms' access to finance. Informal institutions, such as family networks, community-based lending systems, and traditional savings mechanisms, are often relied upon as alternative sources of financing. These informal channels may offer easier access to credit but often come with higher interest rates and less formalised repayment terms. Consequently, firms may rely more on informal debt financing, contributing to a higher debt-to-equity ratio.

Moreover, cultural factors and informal institutions can affect the perception of risk and the willingness of firms to rely on equity financing. In some cases, cultural beliefs may discourage equity investments or favour retaining ownership within family or close-knit networks. This can limit the availability of external equity capital and result in a higher proportion of debt in the capital structure. The reliance on debt financing can be further reinforced by informal institutions that prioritise debt-based relationships over equity-based partnerships. As a result, firms in Nigeria may exhibit higher debt-to-equity ratios due to cultural preferences and the influence of informal institutions on financing decisions.

In addition, the legal and regulatory environment in developing economies can affect the choice of capital structure. Weak legal frameworks, corruption, and political interference can increase the cost of external financing and make equity financing less attractive (Boubakri *et al.*, 2021). In the context of this study, the sharp practices in the Nigerian capital market are evidence of a poor legal and regulatory environment and have adversely affected the impact of DER on performance outcomes even with a controlled tax rate. For instance, the regulatory framework and legal provisions surrounding debt and equity financing can influence the options available to firms and the costs associated with different sources of capital. In Nigeria, the legal and regulatory environment has implications for debt financing, such as the requirements for loan documentation, collateralisation, and interest rate regulations. Complex and restrictive regulations can make it more challenging for firms to access debt financing, leading to a higher reliance on equity financing and potentially reducing the debt-to-equity ratio.

Additionally, the legal and regulatory environment can affect equity financing and the ability of firms to attract external equity investors. Regulations related to ownership restrictions, foreign investment limitations, and listing requirements can impact the availability and ease of equity capital for firms. Stringent regulations and bureaucratic processes can deter both domestic and foreign investors from participating in equity investments, potentially leading to a higher reliance on debt financing and an elevated debt-to-equity ratio. Improving the legal and regulatory environment to promote ease of doing business, investor protection, and efficient capital markets can help enhance the capital structure of firms in Nigeria and create a more favourable environment for both debt and equity financing.

Other factors which influence corporate financing in developing economies are limited market depth and high inflation rates. Developing economies may have limited market depth, making it difficult for firms to raise capital through public markets. This can lead to a higher reliance on debt financing and suboptimal capital structures (Nawaz & Tariq, 2021). High inflation rates also are common features of developing economies which lead to higher borrowing costs and negatively impact the capital structure of firms. Firms may be forced to rely on short-term debt to meet their financing needs, leading to a suboptimal capital structure (Amidu & Abor, 2018). Again, this issue has several concerns because of the negative impact associated with its influence of DER on performance. This could be so because the low influence and limited market depth refer to the reduced number of institutional investors, limited liquidity, and relatively small size of the capital markets. This can make it challenging for firms to access external financing and attract long-term equity investments. Consequently, firms may rely more heavily on debt financing, leading to higher debt-to-equity ratios. The limited market depth can also contribute to higher borrowing costs, as firms face higher interest rates due to the scarcity of available lenders. These factors can increase the financial risk of firms and potentially hinder their ability to invest and grow.

Additionally, high inflation rates in Nigeria can further impact the capital structure and performance of firms. Inflation erodes the purchasing power of a country's currency, making it more challenging for firms to generate profits and service their debt obligations. Firms may experience higher operating costs and face difficulties in pricing their products and services effectively. To mitigate the impact of inflation, firms may resort to borrowing to finance their operations, leading to an increase in the debt-to-equity ratio. Moreover, high inflation rates can create uncertainty and volatility in the economy, reducing investor confidence and making it more challenging for firms to attract equity investments. This further exacerbates the reliance on debt financing and the associated risks.

Lack of transparency is another issue. Weak financial reporting systems and limited disclosure requirements abound in developing economies. This affects transparency in the capital structure of firms. This can lead to a higher cost of capital and suboptimal capital structures (Goyal, Rahman, & Reddy, 2019). In relation to the current study on the relationship between DER and performance parameters in the presence of ETR, when transparency which refers to the availability and reliability of financial information, disclosure practices, and adherence to accounting standards is limited; firms and investors face challenges in accurately assessing the financial health and risks associated with investment opportunities. This lack of transparency

can lead to higher borrowing costs for firms as lenders demand higher interest rates to compensate for the increased risk. As a result, firms may rely more on debt financing to meet their capital needs, resulting in a higher debt-to-equity ratio.

Furthermore, the lack of transparency in Nigerian financial markets deters potential equity investors. Investors require accurate and reliable financial information to make informed investment decisions. Without transparency, investors may be hesitant to commit capital to firms, fearing hidden risks or fraudulent practices. The reduced ability to attract equity investments can further increase firms' reliance on debt financing, contributing to a higher debt-to-equity ratio. Moreover, the lack of transparency hampers market efficiency and can result in the misallocation of resources, limiting the growth and performance of firms in Nigeria as a developing economy.

Limited financial literacy also plays a limiting role in corporate financing in developing economies. Limited financial literacy among investors and managers in developing economies can lead to suboptimal capital structures. This can result in firms relying on expensive debt financing, which can negatively impact their performance (Khan, Nadeem, & Khan, 2021). Considering the impacts of DER on performance parameters as hypothesised in this study, when financial literacy which refers to individuals' understanding of financial concepts, products, and decision-making skills is limited, firms and investors may lack the knowledge and skills necessary to make informed financial decisions, including understanding the risks and benefits associated with different financing options. As a result, firms may struggle to effectively manage their capital structure and make appropriate financing choices, potentially leading to imbalanced debt-to-equity ratios.

Equally, limited financial literacy can contribute to a higher reliance on debt financing among firms. Without a comprehensive understanding of alternative financing sources, firms may

default on debt as a primary means of raising capital. This can lead to an accumulation of debt and an imbalance in the capital structure. Additionally, limited financial literacy can hinder firms' ability to negotiate favourable debt terms, resulting in higher borrowing costs and potentially increasing the debt-to-equity ratio. Overall, enhancing financial literacy among firms and individuals is crucial for promoting a more balanced capital structure, facilitating better financial decision-making, and ultimately improving the performance of firms in Nigeria's developing economy.

Last but very important is the inadequate infrastructure which has become common in developing economies. Issues such as poor transportation networks and a lack of access to reliable electricity, directly and indirectly, affect corporate finance as they increase expenditure. This can negatively impact the capital structure of firms, as they may face higher costs in transporting goods and accessing resources, leading to suboptimal capital structures (Goyal, Rahman, & Reddy, 2019). No doubt infrastructural challenges extend their negative impacts on the relationship between DER and performance in Nigeria's financial market. For instance, when basic infrastructure which refers to the physical and technological systems which support the functioning of financial markets, including trading platforms, settlement systems, and information networks is inadequate, it limits the efficiency, transparency, and accessibility of financial markets in Nigeria. This usually leads to higher transaction costs, delays in processing financial transactions, and limited access to financing options for firms. Consequently, firms may be compelled to rely more heavily on debt financing, resulting in a higher debt-to-equity ratio.

Moreover, inadequate infrastructure can hamper the development of equity markets and the ability of firms to attract external equity investments. The absence of robust trading platforms and reliable information networks can make it challenging for firms to effectively raise equity capital and connect with potential investors. The limited infrastructure may also restrict the participation of institutional investors, reducing the liquidity and depth of the equity market. This can create a situation where firms have limited access to equity financing, leading to a higher proportion of debt in their capital structure and an elevated debt-to-equity ratio. Improving infrastructure in Nigeria's financial markets is crucial for enhancing market efficiency, reducing transaction costs, and facilitating a more balanced and sustainable capital structure for firms in the country's developing economy.

Despite these challenges, some studies have shown that firms in developing economies can benefit from a higher level of debt financing. For example, Kippra (2020) found that Kenyan firms with higher debt levels tend to be more profitable and have higher market valuations compared to firms with lower debt levels.

# 2.2.3.5 Nature of Capital Structure in Developed Economy.

In developed economies, corporate financing and capital structure strategy are slightly different, unlike the developing economies due to several factors including the availability of funding sources, tax policies, regulatory environment, and investor preferences. These factors play significant roles in the capital structure of firms in developed economies, unlike developing economies.

Developed economies often have well-established financial markets with a wide range of funding options, including bank loans, corporate bonds, and equity markets. The availability and accessibility of these funding sources influence firms' capital structure decisions. Firms in developed economies have more opportunities to diversify their financing mix, allowing them to balance debt and equity components in their capital structure and optimise their debt-to-equity ratio.

Secondly, tax policies have a significant impact on the capital structure decisions of firms. Tax regulations in developed economies can incentivize or disincentivise certain types of financing. For example, tax deductibility of interest expenses on debt can make debt financing more attractive for firms, leading to a higher debt-to-equity ratio. On the other hand, tax benefits or incentives for equity financing may encourage firms to rely more on equity, resulting in a lower debt-to-equity ratio. Tax policies directly influence the cost of different financing sources, and firms consider these implications when determining their optimal capital structure.

Additionally, the regulatory environment and investor preferences have an influence. Regulatory frameworks in developed economies set the guidelines and requirements for financial reporting, disclosure, and investor protection. These regulations impact firms' ability to access different financing sources and influence investor confidence. Investor preferences also shape firms' capital structure decisions. In developed economies, investors may have a preference for equity investments due to the potential for higher returns and capital appreciation. As a result, firms may be more inclined to raise funds through equity issuances, leading to a lower debt-to-equity ratio. The regulatory environment and investor preferences collectively shape the financial landscape and influence the capital structure choices made by firms in developed economies.

Equity dominance is present in developed economies and is a dominant feature of capital structure. According to a study by Osterloh and Frey (2021), equity financing dominates the capital structure of firms in developed economies. This is due to the availability of well-functioning equity markets, which provide firms with access to large pools of capital at relatively low costs. For instance, in the United States, the equity market is the primary source of funding for most large firms, with debt financing being used mainly for short-term working capital needs.

Equity dominance, where firms rely more on equity financing compared to debt financing, has both advantages and disadvantages for the capital structure and performance of firms in a developed economy. One advantage is that equity financing provides firms with a cushion against financial distress and reduces the risk of bankruptcy. Since equity does not have fixed interest payments or repayment obligations, firms with higher equity dominance have lower debt levels and thus lower financial risk. This can enhance their overall financial stability and resilience, allowing them to weather economic downturns more effectively.

However, excessive reliance on equity financing can also have drawbacks. Equity financing dilutes ownership and control of existing shareholders, which may limit managerial discretion and decision-making authority. Additionally, issuing additional equity to raise funds can lead to a higher cost of capital, as new equity investors typically require a higher expected return on their investment. This can increase the overall cost of capital for the firm and potentially reduce its profitability. Furthermore, the higher proportion of equity in the capital structure may result in a lower debt-to-equity ratio, limiting the tax shield benefits associated with debt financing. Moreover, equity dominance can influence the perception and confidence of investors and stakeholders. Investors may view firms with higher equity dominance as less leveraged and less prone to financial distress, which can enhance their reputation and attract potential investors. However, it can also signal that the firm lacks growth opportunities or has limited access to debt financing, potentially impacting its competitiveness and growth prospects. Overall, while equity dominance can provide stability and lower financial risk, striking a balance between debt and equity financing is crucial to optimise the capital structure and performance of firms in a developed economy.

Also, the debt tax shield is achievable in developed economies. The tax-deductibility of interest payments on debt financing makes it an attractive source of funding for firms in developed

economies. For instance, a study by Graham *et al.* (2021) found that the average debt-to-equity ratio of US firms is around 0.3, indicating a significant reliance on debt financing. This is driven by the tax benefits of debt financing, which reduces the firm's tax liability. The debt tax shield is a significant factor that influences the capital structure and performance of firms in a developed economy in relation to the use of the debt-to-equity ratio. The debt tax shield refers to the tax advantage gained by firms when they deduct interest payments from their taxable income. This deduction reduces the tax liability of the firm, effectively lowering the after-tax cost of debt financing. As a result, firms are incentivized to use debt as a source of capital to benefit from the tax shield.

The debt tax shield has several implications for the capital structure decisions of firms. Firstly, it encourages firms to increase their debt levels to maximise the tax benefits. Firms can deduct interest expenses from their taxable income, reducing the amount of tax they are required to pay. This can lead to a higher debt-to-equity ratio as firms aim to optimise their capital structure by taking advantage of the tax shield. By increasing debt and reducing equity, firms can maximize the tax benefits associated with debt financing.

However, excessive reliance on debt financing for the sole purpose of tax savings can have negative consequences. High levels of debt increase financial risk and make firms more vulnerable to economic downturns or unexpected shocks. Moreover, the debt tax shield is dependent on the tax rate and interest expenses. Changes in tax policies or interest rates can impact the value of the tax shield and alter the attractiveness of debt financing. Firms must carefully balance the benefits of the debt tax shield with the associated risks to maintain an optimal capital structure and ensure long-term financial sustainability.

Another important issue in corporate financing in developed economies is the leverage ratio. This measures the proportion of debt-to-equity in a firm's capital structure, which varies across industries and firm sizes in developed economies. For example, a study by Bao *et al.* (2021) found that the leverage ratio of US firms is higher in industries with stable cash flows, such as utilities and telecommunications than in industries with volatile cash flows, such as technology and healthcare. Similarly, smaller firms in developed economies tend to have higher leverage ratios than larger firms, reflecting their limited access to equity markets.

Corporate financing decisions play a critical role in shaping the capital structure and performance of firms in a developed economy, specifically in relation to the use of the debtto-equity ratio. Corporate financing refers to the choices firms make to raise funds for their operations, investments, and growth. These decisions encompass a range of financing options, including debt issuance, equity issuance, retained earnings, and hybrid instruments. The composition of corporate financing affects the capital structure, which represents the mix of debt and equity used by a firm to finance its activities.

The decision to rely more on debt financing or equity financing has implications for the debtto-equity ratio. When firms issue debt, it increases the proportion of debt in the capital structure, leading to a higher debt-to-equity ratio. Debt financing offers the advantage of interest tax shields and allows firms to benefit from leverage, potentially increasing returns to shareholders. However, it also exposes firms to financial risk and the obligation to make regular interest payments.

On the other hand, equity financing involves issuing shares to raise funds, which increases the proportion of equity in the capital structure, leading to a lower debt-to-equity ratio. Equity financing provides flexibility, as there are no fixed interest payments or repayment obligations. It can enhance the financial stability of the firm and reduce the risk of financial distress. However, issuing equity dilutes ownership and control, and the cost of equity capital may be higher than debt capital.

The optimal capital structure and performance of firms in a developed economy depend on the strategic alignment of corporate financing decisions with the firm's goals and external market conditions. Firms must consider factors such as their growth prospects, cash flow stability, industry dynamics, and investor preferences. By analysing these factors, firms can determine the appropriate mix of debt and equity financing that maximises shareholder value and supports their long-term objectives. Achieving an optimal capital structure involves finding the right balance between debt and equity, taking into account factors such as risk tolerance, cost of capital, and tax considerations.

Firms in developed economies also take advantage of market timing to determine their capital structure. A study by Graham and Harvey (2021) found that US firms tend to issue equity when the equity market is high and issue debt when the debt market is favourable. This suggests that firms in developed economies actively manage their capital structure to take advantage of market conditions.

Market timing refers to the strategy of issuing securities or adjusting the capital structure of a firm based on expectations of favourable market conditions. It involves attempting to take advantage of market fluctuations and investor sentiment to optimize the timing of capital-raising activities. Market timing can have a significant impact on the capital structure and performance of firms in a developed economy, specifically in relation to the use of the debt-to-equity ratio.

When market conditions are favourable, firms may choose to issue equity or debt securities to raise capital at lower costs. If firms anticipate that equity markets are overvalued or have favourable conditions for debt financing (e.g., low-interest rates), they may increase the proportion of debt in their capital structure. By timing their capital-raising activities effectively,

firms can achieve a more favourable debt-to-equity ratio, taking advantage of lower borrowing costs or higher valuation multiples.

However, market timing is challenging and involves inherent risks. Attempting to time the market accurately is difficult, as it requires accurately predicting market trends and investor behaviour. If firms misjudge market conditions and issue securities when the market is unfavourable, they may face higher costs of capital or encounter difficulty in raising funds. In such cases, the debt-to-equity ratio may be affected negatively, leading to a less optimal capital structure.

Moreover, excessive reliance on market timing can introduce a speculative element to capital structure decisions. Firms may become more focused on short-term market fluctuations rather than the long-term strategic considerations of their financing choices. This speculative behaviour can introduce volatility and uncertainty into the firm's capital structure, potentially impacting its stability and long-term performance.

In summary, equity dominance, where firms rely more on equity financing rather than debt financing, has advantages and disadvantages for the capital structure and performance of firms in developed economies. On the one hand, equity financing provides a cushion against financial distress and reduces the risk of bankruptcy since it doesn't entail fixed interest payments or repayment obligations. Higher equity dominance leads to lower debt levels, enhancing financial stability and resilience during economic downturns. However, relying excessively on equity financing dilutes ownership and control, limiting managerial discretion and decisionmaking authority. It can also result in a higher cost of capital as new equity investors expect higher returns. This, in turn, can increase overall costs and potentially reduce profitability. Additionally, higher equity dominance may limit the tax shield benefits associated with debt financing and influence investor perception, attracting investors looking for stability but potentially signaling limited growth opportunities and restricted access to debt financing. Balancing debt and equity financing is crucial for optimizing capital structure and performance in developed economies.

The debt tax shield, available in developed economies, provides an attractive incentive for firms to use debt financing. By deducting interest payments from taxable income, firms reduce their tax liability and lower the after-tax cost of debt financing. This tax advantage influences the capital structure and performance of firms, leading to a significant reliance on debt financing in developed economies, as shown by the average debt-to-equity ratio of around 0.3 for US firms. The debt tax shield serves as a key factor driving the use of the debt-to-equity ratio and incentivizing firms to utilise debt as a capital source to benefit from tax advantages. Corporate financing decisions critically impact a firm's capital structure and performance in developed economies, particularly the debt-to-equity ratio. Debt financing increases the ratio, offering tax shields and leverage but exposing firms to financial risk and interest payment obligations. Equity financing reduces the ratio, providing flexibility but diluting ownership and control and potentially incurring higher costs. Firms seek an optimal capital structure by considering growth prospects, cash flow stability, industry dynamics, and investor preferences to maximise shareholder value.

Lastly, market timing has implications for the capital structure and performance of firms in a developed economy. Effective market timing can enable firms to optimise their debt-to-equity ratio by issuing securities when market conditions are favourable. However, market timing is challenging and involves risks, as firms need to accurately predict market trends and investor sentiment. Excessive reliance on market timing can introduce speculative behaviour and may result in suboptimal capital structures. Firms should carefully consider market conditions, their

long-term objectives, and the risks involved when making capital structure decisions based on market timing.

## 2.2.4 Firm Performance.

Corporate performance is measured using various financial indices (or ratios) over a specified period (Haniffa & Hudaib, 2006). According to Mardones and Cuneo (2020), the issue of firm performance is a vital consideration to several stakeholders, e.g., investors, employees and managers for performance evaluation, etc. The literature sub-divides such financial indices into accounting (Al-Matari, Al-Swidi, & Fadzil, 2014; Liargovas & Skandalis, 2008) or market-based measures of firm performance (Al-Matari, Al-Swidi, & Fadzil, 2014; Cohn, Mills, & Towery, 2014). The accounting-based indices include things such as profitability, liquidity, solvency, etc. Examples of profitability ratios include such as RoA, NPM, GPM, RoCE etc., while the market-based performance measures may include EPS and DPS, which are derived by likening the security's price to dissimilar fundamentals such as earnings and dividends.

Using empirical data from Nigeria's oil and gas sector, the research work by Olorunfemi and David (2010) found a positive effect of leverage on the earnings per share (EPS) and dividend per share (DPS) of the companies. The literature also documents a host of other issues, which are important determinates of company performance, e.g., corporate governance, entrepreneurial orientation and innovation (Kyvik, 2018; Palacios-Marques, Roig-Dobon, & Comeig, 2017; Rico & Cabrer-Borras, 2018). The study precisely used two accounting-based measures the ROA and EBTM (Earnings before Tax Margin), in addition to one market-based company performance measure, i.e., TobQ (Tobin's Q measure). The latter is a more onwardlooking measure of firm performance than accounting-based measures computed using financial statement data (Shan & McIver, 2011). Singh (2016) also used the EBTM but scaled with total assets on a sample of 61 firms in Oman, and the results found evidence of a negative relationship between the EBTM proxy and leverage.

#### 2.2.5 Firm Performance Parameters.

Firm performance parameters refer to the various indicators or measures used to evaluate the success or effectiveness of a firm in achieving its goals and objectives. In the manufacturing sector, some key firm performance parameters include profitability, which is a key performance parameter for any firm, including those in the manufacturing sector. Profitability can be measured in terms of return on assets (RoA), (Oyinlola & Olufemi, 2021). Profitability is an important dimension of firm performance because it directly measures a company's ability to generate profits from its operations. Profitability is the difference between a company's revenue and its expenses and is usually expressed as a percentage of revenue or as earnings per share (EPS). Research has shown that profitability has a significant impact on a company's overall financial health and long-term success. For example, a study by Gompers and Lerner (2000) found that companies with higher profitability were more likely to survive economic downturns and experience higher long-term growth rates.

In the manufacturing sector, profitability is especially important due to the highly competitive nature of the industry. Companies that are not profitable may struggle to invest in research and development or to compete on price, which can lead to decreased market share and ultimately, failure. For example, in the case of Nestle Nigeria, the company's profitability has been a key factor in its success. According to the company's 2020 financial statements, Nestle Nigeria recorded a profit after tax of N39.2 billion, representing a 21.1% increase from the previous year (Nestle Nigeria, 2020). This strong profitability has enabled the company to invest in new product development and expand its operations, which has contributed to its long-term success in the market. Profitability is a crucial dimension of firm performance that impacts a company's

financial health and long-term success, particularly in highly competitive industries such as the manufacturing sector.

In the context of this study, profitability measures were reduced to these parameters; return on assets (RoA), Tobin's Q, earning per share (EPS), EBIT, and earnings before interest, tax, depreciation and amortisation (EBITDA) which are considered as the most important performance parameters in corporate management for several reasons. This is because according to Adekoya and Abor (2021), these performance parameters are directly linked with the profitability index and provide an assessment of a firm's profitability and performance at different levels of organisational engagement and operations.

Return on assets (RoA), Tobin's Q, EBIT, and earnings before interest, tax, depreciation and amortisation (EBITDA) are considered the most important performance parameters in corporate management for several reasons. First, return on assets (RoA) is an important parameter for measuring a company's profitability as it shows how much profit a company is generating from its assets. It is calculated by dividing net income by total assets which is a powerful performance parameter for owners of the business. RoA is a widely used measure of profitability and is a useful indicator of a company's overall financial health (Adekoya & Abor, 2021).

Second, Tobin's Q is a measure of a company's market value relative to the replacement cost of its assets. It is calculated by dividing a company's market value by its replacement cost. Tobin's Q is important as it provides a measure of the efficiency of a company's investments in its assets. Companies with high Tobin's Q ratios are seen as having high-quality assets and good investment opportunities (Adeniran &Olokoyo, 2020).

Third, Earnings per share (EPS) is a widely used financial performance parameter that measures the profitability of a company on a per-share basis. It is calculated by dividing a

company's net income by the number of outstanding shares of common stock (Yeh & Lee, 2020). EPS is an important performance parameter in corporate management because it provides valuable information to investors about a company's profitability and potential for growth. EPS is used as a key performance parameter by analysts and investors when evaluating a company's financial health and determining its value in the stock market. According to a study by Yeh and Lee (2020), earnings per share is one of the most widely used performance parameters in the stock market and is considered to be a primary driver of stock price movements. Additionally, EPS is an important parameter in managerial decision-making as it provides insight into the profitability of business units, enabling management to make informed decisions about resource allocation and investment. As noted by Malikeh and Ahmadi (2021), EPS is often used as a measure of financial performance in corporate management and is a key factor in determining executive compensation. Generally, EPS is an important performance parameter in corporate management as it provides valuable information to investors and management about a company's profitability, growth potential, and overall financial health.

Fourth, EBIT is an important parameter for measuring a company's operating profitability. It is calculated by subtracting a company's operating expenses from its revenue. EBIT is important as it provides a measure of a company's profitability before the effects of financing and tax are considered. It is a useful indicator of a company's ability to generate profits from its operations (Rasheed & Abduh, 2021).

Fifth, earnings before interest, tax, depreciation, and amortisation (EBITDA) are a measure of a company's operating cash flow. It is calculated by subtracting a company's operating expenses, depreciation, and amortisation from its revenue. EBITDA is important as it provides a measure of a company's ability to generate cash from its operations. It is a useful indicator of a company's financial health and ability to invest in growth opportunities (Okpanachi& Mustapha, 2021).

While RoA, Tobin's Q, EPS, EBIT, and EBITDA are widely used as performance parameters in corporate management, they have also been criticised for several reasons. RoA and Tobin's Q focus solely on financial performance and do not take into account non-financial factors such as social responsibility and environmental impact, which are becoming increasingly important for stakeholders (Makori, 2021).

EPS and EBIT do not provide a comprehensive view of a company's financial performance as they do not consider the effects of taxes and depreciation, which can significantly impact a company's profitability (Hwang, 2020). Lastly, EBITDA is also criticised for not considering the effects of taxes and depreciation, which can distort a company's financial performance and make it seem more profitable than it is (Wright &Galliers, 2021). Therefore, while RoA, Tobin's Q, EPS, EBIT, and EBITDA are important performance parameters, they should be used in conjunction with other metrics that take into account non-financial factors and provide a more comprehensive view of a company's financial performance. Put together, these performance parameters are important for measuring a company's profitability, market value, operating profitability, and operating cash flow, respectively. They provide a comprehensive view of a company's financial health and are useful tools for corporate management to make informed decisions regarding investment and growth opportunities.

2.2.6 Moderating Effect of Tax Avoidance on the Capital Structure and Firm Performance Nexus.

As far back as the 1970s, the research work by Miller (1977) established that corporate tax and personal income tax rates on interest and dividend income play a part in defining a company's capital structure. Thus, firm performance is centred on the ability of the managers to ascertain and operate at an optimal capital structure (Bandyopadhyay & Barua, 2016). Dang

and Tran (2021) found that managers of financially constrained firms often implement risk management strategies and shareholders are likely to transfer risks to creditors from debt financing. They further stated that one risk management strategy is corporate tax avoidance. Studies have explored such a relationship. The study by Khuong, Liem, Thu, and Khanh (2020), found proof of a positive effect of current and cash ETR on RoA and ROE. The sign of the coefficient however turned negative in Tobin's Q model. The authors controlled for leverage in all three models and found a positive effect for the first two and a negative effect in Tobin's Q model. The tax avoidance proxy of BTD negatively affected RoA and ROE; this reversed to a positive sign in Tobin's Q model.

The models also controlled for leverage, which had a positive sign in the RoA model and a negative sign for ROE and Tobin's Q models. In contrast, the current study employs leverage as an independent variable and tax avoidance proxies as the moderator variables.

Using empirical data from Indonesia, the study by Budiman and Fitriana (2021) found a positive impact of tax avoidance on company value. The authors also employed a corporate governance variable as a moderator variable in the regression model. The moderator had a negative impact on firm value. This is in contrast with the current study which employs tax avoidance proxies as the moderator variables. Vătavu (2012) opined that from a trade-off perspective, firms utilise debt because it offers a non-debt tax shield. This is therefore suggestive of the fact that as the tax rate increases firms would opt for more debt financing (Vătavu, 2012).

Ngatno, Apriatni and Youlianto (2021) using empirical data from Indonesia found that the moderating effect of board size on the nexus of long-term debt to total assets with RoA and ROE was positive and non-significant. The outcome was also consistent for the short-term debt to total assets. However, the interaction effect of commissioner size was significant and positive both for long-term debt to total assets and short-term debt to total assets. The moderating effect of shareholder size was positive for RoA but negative for ROE; however, both were insignificant. Empirically, the study by Chen and Chen (2011) using a sample of Taiwanese companies but utilised firm size as the moderator variable established that the interaction of size and ROE had a negative effect on capital structure, while the interaction of size and sales growth had a positive effect on capital structure. The moderating effect of size on asset structure and dividend payment ratio were both negative, while the effect of size on tax and capital structure nexus was positive and significant.

Firm performance or organisational performance is a measure of organizational productivity. Performance puts in perspective the dyadic relationship between the organisation or firm's inputs and outputs with respect to the goals and objectives of the organisation. Garg (2020) contends that performance accounts for the outcome of the sum of efforts (land, capital, labour, knowledge, etc.) invested by an organisation in relation to the sum of goals (products, services, revenue, success, etc.) actualised through the invested efforts. In most organisational evaluations, performance is a measurement outlook of all organisational activities (Vujanović, Stojčić and Hashi, 2021) implying that the very existence of organisations is equated to their performance indices. Performance indices of an organisation are healthy only when the sum of the organisational inputs is less than the sum of the output or when the differential between inputs and out is positive. Ideally, most organisations strive to increase this positive input-output differential (Sahibzada, 2020) with emphasis on lowering the man-hours (labour, time and even resources spent in the productive process) and increasing revenue output. Thus, the organisational performance of a firm is high if the firm has produced desired outputs with minimal inputs (energy, time, capital, personnel, material etc).

In relation to performance, capital as a critical production resource which is used to provide other resources is an important factor in all performance evaluations and indices. Most organisational capital structures are focused on the long-term benefit of the organisation; although, medium- and short-term fiscal policies are also of great importance as they create pathways to actualizing long-term capital plans. The relationship between capital structure and a firm's performance has been evolutionary. Literature has continued to emphasize their relationship, especially regarding the dynamic components of capital structure and the factors that govern its determination. For instance, Zeitunal *et al.* (2021) and Ramli *et al.* (2019) argued that firm leverage as per organisational-specific and country-specific attributes are factors which influence and determine the organisational capital structure and in turn influence performance in relation to finances.

In the recent past, the attention of the global community has been given to the relationship between organisational leverage and organisational financial performance (Abdel-Kader, 2017) and there are many theoretical underpinnings which have provided an explanation in this regard. The argument for comparing organisational capital with their performance has increased owing to the cross-cultural variance across different cultures which influences and determines the capital structure, corporate expenditure and fiscal policies of firms (Vo, 2017).

Despite this influx in literature, there are few studies (Ramli *et al.*, 2019); Detthamrong, Chancharat and Vithessonthi, 2017) which have focused primarily on the direct relationship between capital structure determinants with a firm's financial performance. For example, there are gaps regarding the roles which fixed assets and capital ratios play in firms' financial performance. This is considered in the perspective that most firms weigh and evaluate the options of investing in fixed assets which they use to target enhanced shareholders' profit in addition to utilising higher leverage or a smaller equity capital ratio targeting to improve organisational fiscal performance and financial standings.

Thus, improvements in organizational fiscal performance concerning capital and asset liquidity are most likely to enhance its leverage level due to the effects of utilising physical assets as collateral for loans and debt listing (Ramli *et al.*, 2019). This perspective, only a few studies (Akingunola, 2017; Detthamrong, Chancharat and Vithessonthi, 2017), have sprung up on the effects of organisational leverage and capital structure on organisational fiscal performance. Understanding how different approaches to capital structure affect corporate finance is a continuum across countries due to the peculiarities of each country helps in the understanding of the sources of disparity in literature at least the extent to which each component part of capital structure can determine the fiscal dimension of firm performance (Zeitunal et al, 2017). To understand the impacts of capital structure on a firm's or organisational performance, it is important to evaluate the specific factors peculiar to firms of corporate nature. Such factors to be considered include:

Firm's asset structure – The asset structure of an organisation may be categorized as either collateral value and/or tangible assets (Ramli *et al.*, 2019).

Collateral value refers to the inventory ratio in addition to the total of plant and equipment equated to the total assets. Usually, when the tangible assets are high, there is the potential that debt due to the agency costs could be minimised because it is always easy to convert assets of tangible nature to collateral (Zeitunal et al, 2017); thus, the possibility of increasing corporate financial performance as a result of associated low agency costs of debt arises.

This is consistently in line with the propositions of Agency theory (AT) of capital structure which emphasizes the utility of low debt level in organisational fiscal policy in the possibility of higher growth opportunities. This approach tends to minimise the conflict of interest associated with shares and debt in the event that the wealth or losses accruable to debt holders are transferred to shareholders. Using this approach further boosts the value and power of the firm's financial controller which can benefit the organisation in the use of his or her authority in quick and prompt execution of financial decisions in the face of spot growth potential in the competitive market share.

## **2.3 Theoretical Review**

This section tends to be mainly concerned with utilising theoretical concepts and underpinnings to explain, examine and analyse relevant interrelated theories observed or anticipated relationship between variables in a study that has been previously discussed in prior studies on the matter of capital structure determinants, to explain the concepts in the study. According to Abdullah and Tursoy (2019), a non-singular theory can fully address the capital structure and firm performance nexus. The study specifically itemises and discusses four theories as follows: pecking order (Adeyemi & Oboe, 2011; Olokoyo, 2013), Trade-off theory (free cash flow), agency cost theory (Adeyemi & Oboe, 2011; Lee, Dobiyanski, & Minton, 2015; Wang et al., 2020) and the market timing theory (Orji & Agubata, 2021; Pandey and Sahu, 2019; Kenn-Ndubuisi, Ifechi, and Nweke, 2019). The theories are chosen for their direct forbearance with the study (Vătavu, 2012). Initially, the first proposition by Modigliani and Miller (1958), is based on a perfect market which is highly unrealistic in today's world (Eniola, Adewunmi, &Akinselure, 2017). The assumptions of the M & M theory (Modigliani and Miller) also exposed it to criticisms such as the absence of transaction costs, non-existence of taxes, and equivalent borrowing and lending rates (Ahmeti & Prenaj, 2015; Bandyopadhyay & Barua, 2016; Le & Phan 2017).

#### 2.3.1 Pecking order Theory (PoT).

The concept was originally formulated by Donaldson in 1961 but further altered by Myers and Majlufin in 1984. The notion suggests that managers prefer internal financing to debt financing and equity as a last option (Adair & Adaskou, 2015). PoT argues that firms generally follow 'sequential funding choice' (Adair & Adaskou, 2015; Jaisinghani & Kanjilal, 2017) in decisions as to external or internal financing to employ (Shubita&Alsawalhah, 2012). This implies that managers rank the various alternatives before selection (Jaisinghani&Kanjilal, 2017) and would normally prefer internal financing to external financing (Adair &Adaskou, 2015).

PoT suggests that more profitable companies are more likely to use internal funding than other less profitable firms and therefore seek external financing (Myers, 1984). PoT posits that the management would prefer internal funding to external financing (Wramsby & Österlund, 2004). According to Myers (1984), the majority of firms prefer financing new investments and projects using internal funds before the use of debt. Wramsby and Österlund (2004) opine that internal financing is a cheaper alternative to external funding as it eliminates transaction costs. However, Hutchinson (1995) argues that profit retention has an opportunity cost. Therefore, in the PoT of financing structure, firms do try to link profit and growth prospects to their long-term target dividend payout ratios to reduce the need for external funds (Beattie, Goodacre, & Thomson, 2004).

Based on the above line of argument, Myers opines that an ideal financing structure may be challenging to determine as equity seems to be at the top and the bottom of the 'pecking order' based on the choice (Myers &Majluf, 1984; Myers, 1984). Internal funds sustain no flotation expenses and entail no disclosure of the company's proprietary financial information that may include impending investment opportunities and profits anticipated to accrue as a result of making such investments. PoT is about managerial preference, i.e., a pecking order of alternate sources of finance that a firm faces (Wramsby & Österlund, 2004; Myers, 1984). Firstly, companies choose in-house finance that uses profits from prior years. Secondly, if internal funds are unavailable or insufficient, which borrowing option will the firm utilise e.g., credit or financial institutions such as banks? Thirdly, only as the last alternative will the firm issue novel shares.

The study by Watson and Wilson (2002), using empirical data from 629 UK SMEs, found evidence in support of the PoT. The research work period which covered 1990 to 1995,

accurately showed that retained earnings, change in share capital and change in total debt had a positive relationship with change in total assets scaled by the prior period's total assets. The results were also consistent after including changes in the short-term and long-term assets. The findings are also supported by the study of Chen and Chen (2011) using a sample of 305 Taiwanese firms found evidence to support the greater use of internal financing to support firm decisions.

The contentions of Myers and Majluf (1984) on the underpinnings of organizational performance of firms especially regarding their fiscal activities in relation to their capital and financial policies assume that financing cost increases with asymmetric information wherein financing is rested on a tripod of internal funds, debt and equity. The inadequacy of internal funds initiated and mapped out in line with the organizational fiscal policy in relation to operating finance requirements and investments determines the other sources of finance either debt or equity. Thus, the theory states that more likely, organisations (firms) will prioritize internal sources of finance over the other sources with equity financing considered the least (Miller, 1977).

Although firms may apply and utilise all sources of funds, such firms have preferences which are foremost considered; this preference and consideration create an order in which organizations most likely apply most of their financing policies for solid capital structure. In an organisational financing scenario in view of deponents of the pecking order theory, firms are likely to initiate a startup with their capital and further initiate debts if their internal funds become depleted or are no longer sustainable or adequate and may further issue equity if it is no longer wise to manage debt.

The PoT model predicts that enterprises will choose external financing when "debt capacity" is achieved rather than adopting the optimum capital structure. The idea that the costs and benefits of outside financing, as measured by trade-off theory, pale in comparison to the costs connected with the (inside financing) issuance of new securities is also explained by the pecking order theory, as well as the information asymmetry between insiders and outsiders of the company. Transaction costs related to outside sources of finance must be taken into account when choosing a financing source. The costs associated with debt transactions are similar to those of equity issues. Additionally, he found that raising shares costs less money than borrowing loans in US markets. Managers don't like to relinquish control of their companies, according to Hamilton and Fox (1998). The management often strives to finance their projects using existing internal cash rather than accepting new shareholders for this reason. If the company doesn't have enough internal cash, management will finance the company's activities without any control limitations. Because short-term financing does not require collateral, it is thus acquired first, then long-term debt, and finally stock issuance. The final resort is external equity, which is what the pecking order theory predicts. Retained profits assist in solving the issues, while some slight adverse selection has been noted with respect to debt and equity.

The firm's debt and equity financing are continually on the minds of outside investors. If a company chooses to issue stock, a logical investor will view it as riskier than debt and revalue the company as a result. As a result, businesses believe retained earnings to be a superior source of funding to outside financing. As a result, retained profits are used first whenever possible. A company will select debt financing if it does not have enough retained earnings. If company insiders are more educated about the firm's worth than outside investors, the market may misprice the shares. Businesses up and down the financial food chain set specific preferences to prevent mispricing. Businesses at every level of the financial food chain have preferences set in place to prevent mispricing.

Outside investors will naturally undervalue the stock price of the business when riskless financing is substituted with equity issued by management, according to Myers and Majluf (1984). Wherever possible, managers aim to restrict the issuing of shares to avoid this kind of

investor mentality. Their model predicts that managers will prioritize internal funds before picking up risky debts and equity, which have the same results as those previously mentioned. Businesses withhold profits in the absence of investment opportunities in order to avoid the requirement for future outside financing. Frank and Goyal's (2007) research demonstrate that pecking order can also be caused by agency costs because of the problems with the agency between the firm owners/managers and the outside investors.

## 2.3.2 Trade-off Theory (ToT) or Free cash flow theory.

The concept posits that an ideal capital structure is only attainable from a trade-off of interest tax shields and costs of bankruptcy (Adair &Adaskou, 2015). ToT suggests that a firm chooses which percentage of debt and equity to finance its capital structure by bearing in mind the costs and benefits of both options. ToT is hinged on the assumption that a firm would choose how to allocate its resources after a trade-off analysis of the 'tax benefits of debt' and 'the bankruptcy costs', which concomitantly leads to an optimal capital structure (Adair &Adaskou, 2015). According to Al-Kahtani and Al-Eraij (2018), the 'tax benefits of debt' would prevail up to the point of an ideal capital structure. The theory was originally tailored to the Modigliani and Miller (1958) proposition of perfect capital markets, and the non-existence of agency costs or transaction costs (Adair &Adaskou, 2015).



Figure 2: The conceptualisation of the trade-off theory Source: Lahri, V. (2017).

The Figure above suggests that as managers alter the debt-equity ratio, this results in a quid pro quo between the interest tax shield and bankruptcy costs from increased debt financing which eventually leads the firm to optimal capital structure. Empirically, the study by Adair and Adaskou (2015) using a sample of 2,370 SMEs in France, found that as suggested by the ToT the utilisation trade credit is a potential signal to creditors.

The trade-off theory also called Static trade-off theory underpins the relationship which exists between the gains of increasing debt quantum and the costs of increasing indebtedness which appears to create a frictional imbalance in the capital structure with the possible potential of affecting or negatively impacting overall corporate or organizational financial performance (Miller, 1977). If there are gains in attracting more debt for organisational productivity, operational expenditure or even investment than issuing more equity which benefits organisations with tax reliefs; then, there is the need to ascertain if the outcomes of the debts acquired potentially outperform the cost of such debts or whether they lead to more fiscal distress. Taking this into account, the postulations and contentions of ToT theory are based on ascertaining the gearing level upon which the cost-benefits of organisational or corporate indebtedness are no longer capable of swaying or writing off the cost of the debts such that the organisation or firm do not breakeven after such indebtedness. It is at such a gearing level that the cost-benefit ratio of debts is no longer profitable and good for organisational health. Thus, the debt-to-equity capital structure for organisational financing will largely lean on more equity financing to reduce indebtedness due to debt cost to an acceptable healthy organisational level, although it is pertinent to know that there has been criticism for management practices that optimal levels are difficult to establish in capital financing for most organisations and thus provides a limitation on Trade-off theory which was one the proponents that strengthened equity theorists and arguments towards corporate organisational financing and fiscal policies.

Thus, many organisations largely balance the application of debt-to-equity financing in the realities of their organisation or firm's financial circumstances which provides cover and leverage for utilising the strengths of both methods and integrating the same into their capital structure policies and paradigms. A positive relationship is therefore expected between firm leverage and its consequential performance where a firm is motivated with an incentive to use debt because of the low cost-benefits than going for equity financing. The analysis of the performance of this study is expected to provide stronger antecedents in the application of the theory.

The concept of trade-off theory emerged in a bid to find utility for the cost incurred by the organisation in the cause of business or services and how this type of cost may be utilised in value (trading against other financial values of the firm) such as tax or CSR. In order to take advantage of this type of cost, it is always important that its value is utilised as a part of the funding. According to Baxter (1967), the costs of financial stress are not insignificant and may outweigh the tax benefits of debt financing. Debt has both benefits and drawbacks for corporations: benefits come from tax savings from debt, as noted by Modigliani (1963), while drawbacks come from a firm's greater probability of bankruptcy raising the cost of failure. The trade-off theory predicts that the optimal capital structure exists and is characterised as establishing a balance between tax benefits and debt costs while considering other constant
elements. Companies replace debt with equity or equity with debt until the firm's worth is maximized. This approach can unilaterally be dynamic in the nature financing policy of a firm.

To consider it dynamic, there is a need to evaluate considering that indebtedness wishes and really cannot be equal at any given time in a firm's financing situations. Market friction such as transaction costs and financial market flaws might prevent real debts from being adjusted to the target amount instantly. Fischer et al. (1989), for example, demonstrated that even little recapitalisation expenses may cause huge oscillations in a company's debt ratio over time, whereas Leland (1998) stresses the relevance of debt agency costs in defining optimal debts. Myers (1984) underlines in her model that the adjustment costs are not a primary concern in the setting of static trade-off theory, and they are rarely acknowledged. Adjustment expenses emerge as a result of the time adjustment to the ideal ratio. Real debts might not be instantaneously adjusted to the intended amount due to market frictions such as transaction fees and financial market defects. For instance, Fischer, Heinkel, and Zechner (1989) show how even small recapitalisation costs can result in significant fluctuations in a company's debt ratio over time, whereas Leland (1998) emphasises the importance of loan agency costs in determining the ideal level of debt. Myers (1984) emphasises in her model that the adjustment costs are not a key issue and are seldom ever recognized in the context of static trade-off theory. The temporal adjustment to the optimum ratio causes adjustment costs to appear.

In a typical financial situation of a firm, it is feasible to see the cross-sectional dispersion of current debt ratios over a sample of businesses with the same target ratio; nevertheless, firms cannot completely exclude random occurrences that vary from the optimum. Due to the need for businesses to operate outside of their ideal ratios, significant adjustment expenses may be the cause of the observed large range in current debt ratios. Among the first to support this viewpoint were Taggart (1977) and Marsh (1982). Several authors join this lineage, including Fisher, *et al.* (1989) and Jalilvand and Harris (1984). These authors conducted both actual

investigation and theoretical considerations at the same time. In their view, companies eventually converge to the goal value as a result of simultaneous decisions about investments and finance.

In a two-stage process that involves setting goal values and modifying them, Jalilvand and Harris (1984) model financing choices and dividend aspirations. In addition, they believe that the goals have been established and are curious about the factors that influence the adjustment, period-by-period financial goals, and relationships between financial actions as the adjustment takes place. The variation of the obligations and the changes to the asset (investment) are related, according to Jalilvand and Harris (1984). The following equation states that the firm's resources and uses of cash at a time are the same:

At = LDt + SDt - LIQAt + CPt +,"

According to Jalilvand and Harris (1984), this equation highlights the fact that changes in the firm's assets (At) represent changes in its overall financing needs, which are made up of changes in its long-term debt (LDt), short-term debt (SDT), decreases in liquid assets (LIQAt), increases in deposits in shares through the issuance of shares (CPt), or retention of profits (Et - DIVt). The behaviour of each of these funding methods is modelled by Jalilvand and Harris as follows:  $\Delta Xit = \delta 1it (X^*it - Xit 1) + \delta'2it$  (Rxit) These writers believe that there are two different kinds of modifications that the company does. There is just one particular convergence to a goal value (X \* it), but this level is insufficient to meet all financial requirements. According to Jalilvand and Harris (1984), this equation highlights the fact that changes in the firm's assets (At) represent changes in its overall financing needs, which are made up of changes in its long-term debt (LDt), short-term debt (SDT), decreases in liquid assets (LIQAt), increases in deposits in shares through the issuance of shares (CPt), or retention of profits (Et - DIVt). The behaviour of each of these funding methods is modelled by Jalilvand and Harris as follows:  $\Delta Xit = \delta 1it (X^*it - Xit 1) + \delta'2it (Rxit)$ . These writers believe that there are two different kinds of modifications that the company does. There is just one particular convergence to a goal value (X \* it), but this level is insufficient to meet all financial requirements. According to Jalilvand and Harris (1984), this equation highlights the fact that changes in the firm's assets (At) represent changes in its overall financing needs, which are made up of changes in its long-term debt (LDt), short-term debt (SDT), decreases in liquid assets (LIQAt), increases in deposits in shares through the issuance of shares (CPt), or retention of profits (Et - DIVt). The behaviour of each of these funding methods is modelled by Jalilvand and Harris as follows:  $\Delta Xit = \delta 1it (X^*it - Xit 1) + \delta'2$ 

are two different kinds of modifications that the company does. There is just one particular convergence to a goal value (X \* it), but this level is insufficient to meet all financial requirements.

Nonetheless, there are conflicting findings from earlier studies on the static trade-off idea. Target leverage is not relevant, according to one study. Numerous studies, including those by Titman and Wessels (1988), Rajan & Zingales (1995), and Fama& French (2002), confirm that higher profitability firms typically borrow less, which is contrary to the actual trade-off prediction that higher profitability firms should borrow more to lower their tax liabilities. Graham (2000) calculated the cost and benefit of debt and discovered that large, prosperous businesses with little chance of going into financial crisis utilise debt sparingly. As a hugely prosperous company that has maintained a zero-debt strategy, Microsoft is the paradigmatic example in those studies. Additional corporate executive research demonstrates the target leverage's brittleness.

## 2.3.3 Agency Cost Theory (AcT).

The AcT was propounded by Jensen and Meckling (1976). An agency relationship is "a treaty whereby one or more persons (referred to as the principal(s)) engage another party (i.e., the agent) to carry out some service or duty on behalf of the former which entails entrusting or shifting decision-making rights to the agent" (Jensen &Meckling, 1976). The theory is highly related to managerial financing decisions as it x-rays the often conflict of interest which exists between principals and agents and causes the agents to act in a self-seeking behaviour.

An ideal capital structure is that which lowers agency costs in the firm (Abdullah &Tursoy, 2019). As suggested by Moosa and Li (2012), the optimal capital structure is determined by dropping the agency cost. Agency cost is the summation of 'monitoring costs by the principal, bonding costs by the agent, and a residual loss' effect (Jensen &Meckling,

1976). The agency costs in firms were subdivided into two (Jensen & Meckling, 1976): the 'agency cost of equity' and the 'agency cost of debt' (Abdullah & Tursoy, 2019). The former is attributed to the divergence of interest between the principal (i.e., shareholders) and the agents (i.e., managers); while the latter is caused by a conflict between equity and debt parties in the firm.

The issuance of debt covenants would expose a firm to legal redress in the event of default, and managers concerned about job security are also likely to genuinely make timely interest payments on such debt, which aligns the managers' behaviour to the principals' objective of shareholder wealth maximisation. Studies by Berger and Di Patti (2006) and Margaritis and Psillaki (2010) found that high debt decreases agency costs of equity. However, Jensen and Meckling (1976) argue that the use of secured debt might reduce the agency's debt cost. The debt normally commits the firm to pay out cash as opposed to equity issues such as IPOs and SEOs, which increase the free cash flow available to managers. Using debt reduces the cash flow available to managers for spending and forces them to pay out future cash flows.

Thus, from an agency theoretical perspective, managers in firms act differentially under different capital structures under different capital structure (Qiu& La, 2010). The theory is also linked to a firm's tax avoidance strategy. As stated by Chen and Chu (2005), a company's tax avoidance strategy often creates sub-optimality in the contract between the agent and principal for two reasons. Firstly, there is no direct link between managerial compensation and tax reduction efforts. Therefore a 'risk averse' manager needs to be assured of *ex-ante* managerial compensation from such future efforts (Chen & Chu, 2005; Wang, Xu, Sun, Cullinan, 2020). Secondly, such managerial acts weaken the organisation's internal control systems (ICS) because such plans are hatched in a 'clandestine manner'.

The agency conflict is exacerbated by widening information asymmetry amongst the principals and agents (Lopes, 2016). The existence of information asymmetry leads to a moral

hazard problem or adverse selection choice as managers engage in risk-taking behaviour at the expense of the shareholders and preclude both parties from sharing the risks. According to Jaisinghani and Kanjilal (2017), managers as insiders often have privileged access to private information which may be detrimental to external investors who do not take part in the daily management of the firm.

The contention for the importance of agency cost theory lies in escapable cost which arises in the conflict of interest between stakeholders and owners thus creating a principal and agent stand-off. This is because, practically by the virtues of conflict in the control of resources, enterprises incur costs as a result of the conflict of interests between many stakeholders, particularly between principal and agent (Sdiq& Abdullah, 2022). This expense is well-known in the corporate world and is conceptually explicated by agency cost theory. For a variety of reasons, ownership and management are separated into industrial organizations. In examining the effect of agency cost on the capital structure-financial performance nexus and the empirical evidence for an emerging market, Sdiq and Abdullah contend that firms require substantial sums of money to achieve economies of scale; such that practically professional managers may be better equipped to run the business due to their technical expertise, managerial experience, and personality traits. Share transfers can result in an endless change in ownership without harming the company's operations because ownership and management are separate.

The contentions of Abdulah and Tursoy (2022) and Kalash (2019) were vivid in establishing how the cost of the agency may influence the overall capital structure and consequently its performance. The authors, in aligning their arguments, submit that the agency theory places an emphasis on ownership structure and firm performance and explains how ownership and control are separated in businesses. Because it provides greater insight for investors, stockholders, and those concerned about this issue, which generates so-called "agency costs," understanding the agency theory application in financial management is crucial. The cost of monitoring, policing, and trying to stop managers from taking advantage of employees is known as the agency cost. Utilising debt in financing decisions is one way to solve the agency problem. The principal seeks to maximize their wealth, while the agent typically seeks to maximise his benefit by enhancing his personal wealth and job security.

Given the above individual and group interest, the agency hypothesis thus postulates that managers prioritize their interests over maximising profits to shareholders and this postulation was first introduced by Berle and Means in 1932. The owners, who are principals, and the managers, who are agents, are included in agency theory terms. An agency cost is the degree to which returns to the residual claimants, who are the owners, are less than they would be if the owners, who are the principals, exercised direct control over the corporation (Jensen & Meckling, 1976). According to an allegation, managers are allegedly under pressure to engage in profitable initiatives in order to generate cash flow to pay off the debt (Jensen, 1986). Conflict of interest is crucial to the agency theory (Shrestha, 2019). Conflicts between several stakeholders can occur in an organization, according to agency theory. Agency cost of debt and agency cost of equity both exist. The conflict between a company's owners and management is the first kind to occur. The managers serve as agents for the owners who are the principal. The conflict develops as a result of the managers' dissatisfaction with the owners' decisions. Conflicts may arise due to the compensation of the manager, owners' enjoyment of lavish benefits, owners' pursuit of personal objectives, etc. The second kind of dispute develops between the owners.

There are two different kinds of owners for businesses: those who hold the majority or controlling interest in the company, and those who hold the non-controlling or minority interest. Conflicts result from a lack of trust between them. In this situation, the majority of owners serve as the company's agents while non-controlling owners serve as the company's principal. The third kind of dispute develops between the company's owners and its stakeholders. The stakeholders are the individuals or groups with whom the firm transacts. Participants include the government, creditors, staff, shareholders, and consumers, among others. When the stakeholders believe the owners are abusing their power to their detriment, conflict occurs. Agency cost of debt is the increase in an organisation's cost of debt. The loan providers, such as bondholders, establish restrictions on how their money may be used when there is a dispute between the shareholders and the debt holders. Higher interest rates are a precautionary step taken by debt suppliers to safeguard themselves from the prolonged war. Agency cost of debt results as a result. Due to disagreements between the shareholders and the company's management, the agency's cost of equity developed. Shareholders are required to foot the bill if management veers away from their interests for whatever reason. In order to prevent shareholders from influencing management's decisions, agency cost of equity is a cost involved. Agency issues require constant attention. To deal with disputes, agencies must incur money. Usually, the expense incurred falls under operational expenses in the records.

Furthermore, another perspective on understanding agency-related cost in consideration of capital structure and planning of a firm lies when shareholders' interests diverge from managers' interests, agency costs of equity appear. Good planning could lower these costs. The agency theory is the most well-known and popular theoretical framework for looking at conflicts of interest that can arise during a firm's operation and its management decisionmaking process. Agency theory is a major focus of current research. This theory's central tenet is that agency theory has a favourable effect on financial performance.

Considering the nature of firm financing options (of either equity, debt or both) it is pertinent to note that the balance sheet shows a company's capital structure, which consists of a mix of debt and equity. The assets of the business, which are also recorded on the balance sheet, are bought using loans or stock. Long-term debt, short-term debt, ordinary stock, and preferred stock can all be included in a company's capital structure (Abdullah, 2021). When examining a company's capital structure, one factor to take into account is the ratio of shortterm to long-term debt. Decisions made by managers on financial strategy might result in agency costs (Dawar, 2014). Consequently, there is evidence that capital structure affects a firm's financial success (Abdullah & Tursoy, 2021b; Liao *et al.*, 2022). The literature's findings are conflicting, yet studies nevertheless urge further research to be done in poor nations (Kontu, 2021). In order to explain these conflicts of interest with the organisational financing policies and their consequences on performance, the idea focuses on finding solutions to issues that develop when there is a conflict of interest between the principal and agent (Nidumolu, 2018). Thus, it would be possible to maximise the performance of the company (Abdullah *et al.*, 2021). The expectation for financial performance is higher the lower the agency cost. Furthermore, due to the pressure on managers to repay debts, Tuan *et al.* (2019) confirm that debt can be a helpful tool for reducing the detrimental effect of agency costs on financial performance. As a result, managers are less able to focus on their personal interests, which lessens conflicts of interest. The agency theory is rejecting the hypotheses despite the scrutiny it has undergone since it was introduced some decades ago.

# 2.3.4 Market Timing Theory (MTT).

The market timing theory was propounded by Lucas and McDonald (1990) to explain the market performance phenomenon in which the pursuit of new financing or equity is based upon prevailing market performance. This theory recognizes that every market economy passes through different phases; such that during a recession economy, equity is less in contrast to the performance during an economic boom when equity financing is large. These positions are held to be true using market timing determinism to aid the financial planning and capital structuring of a firm or corporation. For example, the proponents of Market timing theory as confirmed by the empirical examination of Bayless and Chaplinsky (1996), and later by the works of Baker and Wurgler (2000) provided amplified support for the relationship between equity issues and the phase of the economy or market setting or activities such that equity can be raised more favourably at lower basis points at high equity issue volume periods (HOT) than at low equity issue volume (COLD) periods. Given this contention, the best periods to raise equity are seasonal depending on the market timing of price reaction. Hence, it is safe to say that lower price reaction in a hot market economy is important to equity financing since it is independent of macroeconomic windows of opportunity for equity issues in reality with the forces of demand and supply.

To utilise the propositions of this theory, there is a need for the organisational management to vary their approaches to financing in observation of the market evolution with greater emphasis on the timing of low-price reaction on the equity market in order to take advantage of excessive demand which will drastically lower the basis points for issues. For instance, managers in the principle of market timing theory may likely postpone the new issue of equity for better market conditions especially, if they envisage that they are in COLD periods with high basis points; although, this model may be contested by management and the academic as the market is boundless depending on the country, level of economy and sector performance in such economy.

The capital development level of a particular country in addition to the sector-specific economic performance further provides an understanding of the importance and utility of Market timing theory in the use of equity financing. For example, the Nigerian banking sector witnessed HOT periods during the recapitalisation era of the Central Bank of Nigeria's policy reforms of commercial banks in Nigeria. During this period, which may be regarded as better market conditions due to a high volume of issue demand by the public following issue announcements, it was obvious that equity financing was cheaper and lower than at other times. This situation is exemplary of the utility of market timing in equity financing as a way of getting the best of that capital structure method.

Furthermore, it is expedient to also consider that the market timing theory contends that managers have the ability to time the market, issuing equity when the company's stock is overpriced and repurchasing equity when it is undervalued. As portrayed and contrasted by the Pecking order theory which contends that corporations will favour debt financing over equity financing due to the greater costs of equity issuance and that firms will only issue stock when they are under financial pressure the importance of timing stands out although the theories despite receiving varying degrees of support; gaps still exist in their functionality especially regarding about their relationships in real financial alternatives. For instance, Dong *et al.* (2012) looked at how financial restrictions and market timing interact. Examining the relationship between market timing and financial restrictions is important for a number of reasons.

First, the degree of financial limitations should be taken into consideration when analysing the impact of market timing on securities issuance. If a company lacks financial flexibility, it may not be able to issue (repurchase) equity when its shares are overvalued (undervalued). In other words, market timing is only practical when businesses are not under as much financial pressure. As a result, the equity value should negatively predict the postannouncement stock performance, particularly for issuers with unlimited financial resources. Second, equity valuation may affect how the pecking order works. Any effects suggested by the pecking order may be overridden if the firm's shares are overpriced due to the incentive to issue overvalued equity. In other words, according to the pecking order, a financially unrestricted corporation is anticipated to employ debt financing, but if the firm is overvalued, it may decide to issue equity instead. Third, finding such an interaction should assist in excluding market timing interpretations as opposed to "rational" theory interpretations because the latter does not affect the relationship between aberrant stock performance and financial limitations. The post-announcement abnormal stock returns, for instance, are not predicted to differ for enterprises with various levels of financial restrictions under rational theories.

According to the market timing theory, businesses should issue equity when it is overpriced and repurchase equity when it is underpriced. As a result, equity issuers need to be overvalued more than debt and stock repurchase issuers. We measure valuation using the market-to-book equity ratio (or related variables like Tobin's Q, as will be covered later). According to the market timing concept, MB should be higher for equity issuers than for debt issuers or re-purchasers. However, as mentioned in Dong, Hirshleifer, Richardson, and Teoh (2006), MB and associated variables (such as pre-issue stock returns) may also signal development prospects, managerial abilities, etc. We further investigate stock performance before and after the announcement of funding decisions in order to differentiate market timing from alternate interpretations.

When their shares are overvalued, undervalued companies should issue (repurchase) shares, according to market timing (undervalued). After the issuance announcement, the market will correct the pre-announcement mis-valuation, which will result in lower (higher) postannouncement stock returns for high-MB (low-MB) corporations. The degree of financial limitations should be taken into consideration when determining the impact of market timing on security issuance. Companies may only be able to do this if they have enough financial flexibility. Companies that want to issue (repurchase) equity when their shares are overvalued (undervalued) may only be able to do so. As a result, market timing is only feasible when enterprises have fewer financial constraints. Therefore, if the market timing theory is accurate, equity valuation should be a poor indicator of post-announcement stock performance, particularly for issuers with unlimited financial resources. Similarly, a financially constrained firm may not be able to take more debt even if its stock is undervalued.

### 2.3.4.1 Relationship between Market timing theory and capital structure.

Despite receiving considerable attention since the final part of the 20th century, the impact of market timing on the capital structure was not calculated or assessed until the early 2000s. Market timing has a major and long-lasting impact on the capital structure, according to Baker and Wurgler (2002). With reference to its effects on the structure of financing options available to firms, Baker and Wurgler presented information showing that companies with minimal leverage tended to be those that issued equity at a time when the market valuation was low. This observed impact was consistent for more than a decade.

Alti (2006), however, has disputed Baker and Wurgler's (2002) conclusions based on their assessment of market timing which in Alti's perspective is not always the same outcome in every situation. Low ideal leverage ratios result from the market-to-book ratio's tendency to correlate with underlying qualities including long-term growth traits. Alti selected the "hot market" dummy variable as his measure of market timing which enabled the emphasis on the necessity of isolating market timing in order to research its long-term impact on capital structure.

When many companies are offering their stock publicly, it is said to be a hot market. The hot and cold markets are identified using monthly IPO volume, as suggested by Alti (2006). The total number of IPOs for each month is first determined. Following that, a hot market dummy variable is made. It is equal to one if a company performs an IPO when the average number of IPOs for the entire period is higher than the number of IPOs in the given month. The variable is equivalent to zero in the opposite circumstance. For Alti, a hot market can be characterized by the level of issuers such that an above-average number of issuers is characterised as a hot market. According to Alti (2006), there is a considerable market timing influence on the number of proceeds from stock issuance. Additionally, he discovers that market timing has a short-term detrimental impact on leverage. Nonetheless, it is usually 108 observed that two years after the initial public offer (IPO), this effect (the leverage advantage as per hot market) ends. Therefore, Alti (2006) from this happenstance draws the conclusion that although market timing is crucial in financing choices, its impact on leverage targets is only temporary. Leary and Roberts and Kayhan and Titman (2006) also came to the same results (2005).

From the above, it is important to note that understanding of capital structure mix which determines a firm's performance is embedded in the firm's circumstances, especially regarding the timing of their organisational existence and the timing of resources available which typically favours some and not others. Regardless of the financial evolutionary process of such firms, market forces are shaped by the economic realities of the operating environment and the firm's management styles (Ater, 2017). Hence, market timing critically influences the choice of the financial structure of the firms even before such firms can take decisions regarding their finances. This is because the timing argument is economic and resource climate oriented. For instance, Demirgüç-Kunt *et al.* (2020) argued that the economies of the times of global financial crises impact differently on firms' finances and investment portfolios. There is always apprehension and unwillingness by the public to buy equities in times of global recession due to pressures and fears that values will be lost more quickly than ever.

In line with the above, the "market timing" argument put forth by Baker and Wurgler (2002) and later by Stein (2004) attempts to analyse capital structure decisions in view that "capital structure is a cumulative outcome of prior attempts to time the equity market." In this perspective, the question of "when" and "how" of market time was attempted and answered by Brown and Wurgler (2002) who contends that market timing is relative to economic and non-economic climate conditions which impact the market sentiments considerably. This is so because timing the market significantly involves attempts to analyse the market sentiments with the hope of seizing the opportunities there and utilising them for their suitability for a type

of capital financing (Ater, 2017). This further considers the inherent advantage that such timing or periods present especially regarding the availability and flow of resources which may be inherent or determined by certain forces and economic climates within the market circumstances. Such economic factors which may influence the timing of markets and affect financing options are market trends, opportunities for profit and loss, economic politics and forces of demand and supply (Demirgüç-Kunt *et al.*, 2020). Although the list is not exhaustive, every other issue tends to revolve around these cardinal issues.

Relating trends to firm financing and firm performance, Picasso et al. (2019) contend that trends give traders and investors the opportunity to make money, and as such there is an increase in equity and other forms of long-term investments whereas the market conditions offering such issues on equity basis enjoy the opportunity to issue at the lowest prices available and take advantage of the trend. Market trends are always encouraging to investors and the public and firms especially take advantage (Traina, 2018). For example, speculation of an expected rise in share values of some company may spark and derive investment in that share causing the equity of such share to rise astronomically. In the scenario above, the marking timing of the rise in the value of shares favours equity capital structure which management of firms can take advantage of. In relation to firms' financial standing and their access to financing options, trends which also imply profits and losses are determined by the flow from one price to another, whether on a short- or long-term time horizon in a market that is generally moving, or in a market that is range-bound. Long-term trends and short-term volatility are both influenced by four main causes. According to Picasso et al. (2019), these elements fundamentally include the government, global trade, speculative expectations, and supply and demand.

The idea behind market timing is that businesses predict when the public will buy the shares they issue. According to the hypothesis, shares are only issued when they are highly valued and repurchased when they are less valuable. The dynamics of capital structure have been influenced by two different forms of market timing theory: The notion that economic actors are logical comes first from Majluf and Myers (1984). In order to address the issue of information asymmetry between the management of the company and investors, firms directly issue equity upon the revelation of actual information. Following that, the stock price increases as asymmetry decreases. Consequently, businesses start to develop their timing opportunities in line with the perspectives aforementioned.

According to Baker and Wurgler's (2002) second theory, economic agents are irrational, which causes a company's stock to be mispriced over time. More specifically, managers time their financing choices to the equity market, which means that they issue stock when the value is high and repurchase it when the value is low. The result will be a lower cost of capital for the company, which will be advantageous for the current shareholders. Equity market timing has an enduring impact on the firm's capital structure, according to Baker and Wurgler's research from 2002. According to their analysis, a weighted average of external capital requirements over a number of prior years, where the weights employed are a market-to-book value of the firm, serves as a metric for market timing. They discovered that changes in leverage are strongly and favourably connected to their market timing metric, leading them to draw the conclusion that a company's capital structure is the result of numerous prior attempts to time the equity market.

The result will be a lower cost of capital for the company, which will be advantageous for the current shareholders. Equity market timing has an enduring impact on the firm's capital structure, according to Baker and Wurgler's research from 2002. According to their analysis, a weighted average of external capital requirements over a number of prior years, where the weights employed are a market-to-book value of the firm, serves as a metric for market timing. Accordingly, the authors discovered that changes in leverage are strongly and favourably

connected to their market timing metric, leading them to draw the conclusion that a company's capital structure is the result of numerous prior attempts to time the equity market.

Studies on how market timing affects capital have become more popular since Baker and Wurgler (2002). The impact of market timing on capital structure is supported by some papers (e.g., Jenter, 2005; Elliott *et al.*, 2007, Huang and Ritter, 2009). Therefore, evidence supporting the market timing theory comes from both the equities and debt markets (Bancel and Mittoo, 2004; Henderson *et al.*, 2006). Since historical market values and capital structure have a close relationship, Baker and Wurgler conclude that capital structure is the result of prior attempts to time the equity market (2002). Their findings show that market timing does affect the capital structure, but the influence does not last for a very long time.

2.3.4.2 Other non-economic that influence market timing.

Other than economic conditions, there are other circumstances which may equally influence the market conditions and by so doing influence the market sentiments which are watched by the firm's management for decisions on the capital structure of their respective firms. Such no economic conditions include but are not limited to social, political, security and natural conditions which intervene with the economic situations of the host environment.

Social factors – Essentially, the attitudes that people of particular groups (it could be a country or an economically identifiable target) have toward market investment and participation in the economic opportunities offered by firms and the market, spending money and the general notion of economic participation in particular, essentially what think about is how to take advantage that markets offer. In this view, social factors are demographic or "target market" specific because the environment creates and moderates such an economic environment. In order to comprehend the views and sentiments of the social environment, there is a need for "segmenting the market" by

focusing on the attributes of people in the economic environment or the target market, especially regarding their lifestyle and need for investment and consumption of certain goods or services. Firms can, through their product development and advertising techniques benefit from an understanding of consumer perceptions of people who make up the target market and can advantage of this social form of capital.

- Political factors Another non-economic factor which impacts on the capital market and consequently affects market opportunities and timing is political factors. Government policies and partisan interests can create investment opportunities as well create good market timing for IPO which falls within the advantages of the firm's financing structures. For instance, in Nigeria where the focus of this study was centred, government economic blueprints and policies are largely inconsistent and, in some cases, government partisan interest in some sectors creates a market advantage for timing both for and against firms and the investing public. These conditions may be leveraged in predicting market timing sentiments for issuing IPOs and can also determine the performance of the capital market and individual corporate performance.
- Security The security of any market environment is a crucial element that affects market conditions. Volatile security conditions with regard to the market environment could potentially influence public sentiments towards investment and as such will affect choices for financial policies (capital structure) of corporations. In Nigeria for example the menace of the dreaded Boko Haram, the herdsmen, Unknown gunmen and bandits have affected agricultural production as more farmers are prevented from assessing their farmlands as a result of the activities of the people listed above which have created an insecure atmosphere for business investment. Thus, the market sentiments of the agricultural sector are affected by insecurity and in turn it affects the market timing for

cheaper equity for corporations hoping to utilise equity as their source of funding in line with their capital structure.

This theory (market timing) places a strong emphasis on how the market values a company in relation to how the management perceives its inherent value. As a result, when equity is highly valued, the company is more likely to issue it. According to the market timing theory, managers can boost the wealth of current owners by timing the issuance of securities.

As a result, businesses tend to issue equity when stock prices are too high and repurchase equity when the market is too low.

2.3.4.3 Understanding market timing theory using dynamic information asymmetry and timevarying mispricing.

To understand the utility of market timing theory, it is pertinent to align with the assumption that information asymmetry is not continuous data, and as such market timing can be supported by this possibility. Choe, Mansulis, and Nanda (1993) laid the foundation for this understanding through market climate investigation in which they found that unfavourable selection could differ over time. Adverse selection differs between firms, according to the research done by Korajzyk, Lucas, and McDonald (1992) and Lucas and McDonald (1990). Therefore, a firm may sustain its new capital structure if the expense of departing from the optimal cost structure is modest in comparison to the proportionate gains from lessened information asymmetry. In that situation, the capital structure's long-term impact on market timing is seen.

From another perspective, time-varying mispricing enabled an understanding of market timing. The perspective attempts to explain that the market timing effect makes use of time-varying mispricing and the presumption that investors are not rational. In these circumstances, companies issue equity if they think the cost of equity is absurdly low. High market-to-book values are shown to be linked to higher investor expectations by Frankel and Lee (1998). If there is no optimal amount of leverage, it is unnecessary to rebalance the capital structure even if businesses arrive at the correct valuation. In this instance, the variations in the mispricing are utilised as an effective component of determining capital structure, especially as regards valuations in equity which are used as leverage by management in IPO.

2.3.4.4 Duration effects of market timing on capital structure.

**Long-term**– It is crucial to ascertain whether the market timing effect on capital structure is reversed in the following years in order to assess its durability. The following regression can be used to provide a response to this query.

$$Yt = \beta 0 + \beta 1Hot + \beta 2M/Bt-1 + \beta 3EBITDA/At-1 + \beta 4Sizet-1 + \beta 5PPE/At-1 + \beta 6R \& D/At-1 + \beta 7RDDt-1 + \beta 8D/APRE-IPO + ut (4)$$

The dependent variables, in this case, are the following:

- D/At D/At-1 cumulative change in leverage.
- D/At absolute leverage.

:

**Short-term** – Market timing can have short-term effects on capital structure such that there is a mechanical, short-term influence on the leverage ratio because the companies who perform IPOs during the booming market issue more equity. Using the following regression, the shortterm impact of market timing may be estimated.

$$Yt = \beta 0 + \beta 1Hot + \beta 2M/Bt + \beta 3EBITDA/At - 1 + \beta 4Sizet - 1 + \beta 5PPE/At - 1 + \beta 6R \& D/At - 1 + \beta 7RDDt - 1 + \beta 8D/At - 1 + ut(2)$$

Besides the change in the leverage, compared to the pre-IPO year, it can be decomposed further, as it was suggested by Alti (2006).

$$D/At - D/At - 1 = -e/At - 1 + (E/A)t - 1 * (\Delta Cash + \Delta Other Assets))/At - \Delta RE/At (3)$$

The reason for the structural changes in the leverage is given by this decomposition. It also demonstrates how the adjustment in leverage was accomplished precisely. The utilisation of the issuance's proceeds is indicated by the net equity issue (e/A) and the equation's second left-hand term. The money raised can be put to use repaying existing debt or boosting a company's assets by acquiring more cash and other assets. In the equation above, the dependant variable is used to represent every element of the equation:

- *D/At D/At*-1 *change in leverage, compared to the pre-IPO year.*
- *D/At* leverage ratio in the IPO year.
- -*e*/*At*-*1 the negative value of the net equity issues.*
- $\Delta Cash/At$  change in cash-to-assets ratio.
- $\Delta Other Assets/At change in other assets-to-total assets ratio.$
- $\Delta RE/At$  change in retained earning-to-assets ratio.

Despite being a new capital structure theory, the market timing hypothesis is not a novel concept. Other early studies (Marsh, 1982; Lucas and McDonald, 1990; Ritter, 1991; and Loughran *et al.* 1994) provide evidence in favour of the market timing concept. Bancel and Mittoo (2004) showed that managers are more active in choosing the timing of equity issuance and that issuing shares following an increase in the firm's stock price is a critical element in their study of European firms. For example, when comparing different financing sources and instruments, organisations are significantly impacted by market conditions and the history of security pricing, according to Marsh's (1982) investigation of security challenges of UK enterprises. A model that Lucas and McDonald (1990) provided in their work forecasts that stock issues will typically be followed by either an abnormally favourable return on the share

price or a rise in equity prices. According to the market timing theory, Mahajan and Tartaroglu's findings from 2007 show that company leverage is inversely connected with historical market-to-book value across all G-7 nations.

According to the majority of studies (Ritter, 1991; Loughran *et al.*, 1994; Loughran and Ritter, 1995; Spiess and Affleck-Graves, 1995), businesses that issue shares, whether through IPOs, do poorly. These results demonstrate that businesses seized windows of opportunity during overvalued share prices. The market-to-book ratio was shown to be associated with average in certain research that examined the relationship between capital structure and the G7 countries' market-to-book ratio. Despite the links between them having a hazy theoretical foundation, the researcher offered this as proof of market timing. In comparable circumstances, Pagano *et al.* (1998) discovered that market-to-book is the most significant factor among factors influencing going public decisions in a sample of Italian companies for the years 1982–1992.

The Graham and Harvey (2001) survey provided additional data in favour of market timing. According to the report, market timing is the top factor influencing CFOs' choice of financing source. In this scenario, the company provides short-term debt in an effort to time market interest rates, while managers are hesitant to issue shares when a company is thought to be undervalued or stated. Hovakimian *et al.* (2001) evaluate both equity and debt issuance decisions in the context of popular capital structure theories, such as the pecking order theory and trade-off theory, among others. However, the study shows that share prices are a significant factor in deciding the choice of financing sources for businesses.

Compared to corporations that experience share price declines, businesses that experience share price increases are more inclined to issue equity and repay debt. When stock prices are overstated, most managers are hesitant to issue shares. According to Huang Ritter (2009), when the cost of capital is lower, businesses use net external equity to pay their deficits. The historical

costs of equity capital have persistent effects on firms' capital structures, even after adjusting for firm characteristics that are acknowledged as the most important capital structure drivers. This is another argument in favour of market timing theory. The market timing theory's applicability has been confirmed in several institutional contexts.

For the Netherlands, France, and thirteen European nations, respectively, De Bie and De Haan (2007), Bougatef and Chichti (2010), and Gaud *et al.* establish a negative link between marketing timing measure and leverage (2007). According to several articles, the market timing theory drives security issuance decisions in developing nations (Henderson *et al.*, 2006, Cohen *et al.*, 2007; Bo *et al.*, 2011). Interest in the subject of capital structure was greatly sparked by the important study by Baker and Wurgler (2002), research on market timing. The majority of the research might be seen as responses to Baker and Wurgler's (2002) finding that the capital structure was the result of cumulative efforts to time the equity market as well as the consequences of historical market values on capital structure are a long-lasting impact. According to Taggart (1977), the study offers evidence that changes in the market valuations of long-term debt and equity are significant factors in US companies' decisions to issue securities.

Numerous other researchers suggest that the market timing theory has a lasting influence on choices regarding capital structures. The managerial timing study by Jenter (2005) shows evidence of market timing at both a corporate and administrative level, where firms with low market-to-book ratios are deemed to be value businesses and firms with high market-to-book ratios are considered to be growth enterprises. These companies have managers who buy equity on their own and then repurchase it for their companies.

The residual income model is used by Elliott *et al.* (2008) to assess the influence of market timing and equity mis-valuation on business decision-making about corporate borrowing. The findings are in line with Baker and Wurgler's findings from 2002, which indicated that when

stock is overpriced, corporations are more likely to issue equity to finance their deficit. Additional support for the market timing hypothesis comes from the debt markets as well as the outcomes of the capital structure decisions made by businesses, in addition to the investment markets. Evidence of market timing that is forward-looking, as reported by Bancel and Mittoo (2004) and Baker *et al.* (2003). Managers frequently issue short-term debt when forecasting future interest rate decreases, but when anticipating future interest rate hikes, they frequently issue long-term debt and make long-term debt issuance decisions.

When interest rates are low in comparison to previous values, corporations issue more debt about investment spending and equity, which is evidence of backwards-looking market timing, according to Barry *et al.* (2008). International market timing is examined by Henderson *et al.* (2006) for both stock and debt markets. The results showed that market timing is particularly significant in management decisions regarding the issue of securities. Prior to an increase in interest rates, businesses frequently issue long-term debt when rates are lower. According to Doukas *et al.* (2011), corporations issue more debt during hot market periods than during cold market periods when capital market conditions are considered favourable. In addition, the capital structure of debt issuers is still feeling the effects of the hot debt market.

The work of Baker and Wurgler has received two criticisms (2002). First off, despite the widespread agreement that market timing has a transient impact on capital structure, numerous research has failed to demonstrate how this scenario has a long-term effect (Leary and Roberts, 2005; Alti, 2006; Flanner and Rangan, 2006; De Bie and De Haan, 2007; Kayhan and Titman, 2007; Nguyen and Boubaker, 2009). In an effort to understand market timing and how it affects the capital structure, Alti (2006) placed more emphasis on an initial public offering that came from a single finance source. Market timers are companies that list on the public market while it is "hot," as shown by some issuers' high market valuations and robust IPO volume.

According to research by Alti (2006), hot market issuers had lower leverage ratios than cold market companies. Due to these findings, it can be said that although market timing has modest long-term implications, it is a critical short-term factor in determining financing activity. The existence of market timing for security issuance was supported by Flanner and Ranagan (2006) in accordance with Alti (2006), however, Baker and Wurgler's (2002) position about the durability of the impact of market timing on the capital structure was not shared. It is discovered that share price volatility has a short-term impact on debt ratios but attempts to meet the desired leverage ratio quickly counteract these fleeting effects.

Despite finding the negative effects of the real market-to-book ratio on US business leverage, Kayhan and Titman's analysis from 2007 does not support the persistence of these effects over time. The results show that, even though a firm's history has a significant influence on capital structure decisions, financing options tend to shift over time toward target debt ratios, which is consistent with the trade-off approach. The results are in line with the claims made by Leary and Roberts (2005), who stated that corporations deliberately rebalance their leverage so that the effects of market timing vanish three to five years after stock issuances by companies.

Baker and Wurgler's (2002) assertion that capital structure is the result of prior attempts at timing the equity market which was contested by Hovakimian's (2006) study. The timing of debt issuance and debt reduction in enterprises' capital structure decisions was not supported by any compelling data, according to the author, who looked for it in the equity market. Even though stock transactions can be used to predict equity market conditions, they have no long-term impact on the capital structure. The study also reveals that the market-to-book ratio's influence on leverage isn't related to the timing of the equities market but rather highlights the firms' growth prospects.

The second issue with market timing is the misuse of the historical cost market-to-book ratio as a reliable indicator of a company's market timing efforts. Although Baker and Wurgler (2002) brought up this topic in their study and some authors have stated that they think their findings support equities mispricing in the presence of irrational investors or managers, there are several possible interpretations. Market-to-book testing for market timing is fraught with challenges. These issues arise from the ratio's ability to be interpreted in a variety of ways, which can include asymmetric information, growth options, and debt overhang issues (Elliott *et al.*, 2007).

The findings of Baker and Wurgler (2002) are not driven by prior equity market timing, according to Hovakimian (2006) and Kayhan and Titman (2007), but rather by the firms' growth potential. In contrast to Baker and Wurgler (2002), much research employs various techniques to evaluate the market timing theory. Jorgensen and Terra (2002) carried out their research in seven nations in Latin America to examine the impact of each nation's size, profitability, chances for expansion, taxes, and business environment. Pooled regression analysis was used in their investigations to assess the effects of macroeconomic and institutional issues. According to the findings, there was no evidence to support business risk, and profitability was only one factor that consistently exhibited bad behaviour. The difficulties of other nations that do not permit the buyback of shares, such as Kenya, have not been discussed in the majority of studies on market timing and capital structure.

De Jong *et al.* (2008) conducted a study in which they examined the direct and indirect effects of macroeconomic and firm-specific factors on the corporate capital structure of select enterprises from industrialised and developing nations. According to their research, tangibility and firm size had a beneficial impact on long-term debt ratios at market value in some of the countries, whereas growth prospects and profitability had a negative impact. Even though

market timing is demonstrated by Bie and Haan (2007), the effect does not endure over time. The Shenzhen market's results mirrored those of Tian, Shao, and Luo's investigation, which they conducted (2008). Most research on market timing and capital structure that has been undertaken has not discussed the problems.

### 2.3.5 Theoretical Justification

This study of "Capital Structure, Corporate Tax Avoidance, and Firm Performance: A Study of Firms in the Manufacturing Sector Listed on the Nigeria Stock Exchange" utilized the *Pecking Order Theory (PoT), Trade-off Theory (ToT), Agency Cost Theory (AcT), and Market Timing Theory (MTT)* in the underpinning of the import of tax and term structure of debt in the effect of capital structure on firm performance because these theories collectively address the nuanced aspects of financial decision-making, capital structure, tax considerations, nature of debt and firm performance. Each theory provides distinct perspectives that are integral to answering the research questions and analysing the complex interactions in capital structure management within the manufacturing sector.

The use of the Pecking Order Theory (PoT) – highlights the inherent preference for internal financing which is a major characteristic of developing capital markets such as Nigeria. The Pecking Order Theory explains the reluctance of Nigerian manufacturing firms as seen in the study to issue equity due to the high costs associated with capital markets in developing economies like Nigeria. Internal financing is cheaper and avoids diluting ownership, which aligns with the financing behaviour observed in the Nigerian context. In relation to its impact on the Debt-to-Equity Ratio, Nigerian firms, constrained by limited access to cheap external debt and high equity issuance costs, often depend on retained earnings for funding. This provides an essential framework to assess how firms prioritise internal versus external funding when analysing the impact of the debt-to-equity ratio on performance as captured by Research

Question 1. With its implications on tax, PoT suggests firms avoid issuing equity to evade transaction costs. This connects with the role of tax policies and corporate tax avoidance strategies, as firms in Nigeria seek to minimise financial and regulatory burdens.

A look at the Trade-off Theory (ToT) presents an interesting understanding of capital structure in third-world firm management. This is most exemplified in balancing debt costs and tax shields. Thus, the Trade-off Theory is especially relevant in understanding how Nigerian manufacturing firms strive to optimize their capital structure by balancing the benefits of tax-deductible interest (tax shields) against the risk of bankruptcy costs. Another dimension is in the firm performance and leverage in which ToT aids in evaluating how the term structure of debt as captured by Research Question 2 also impacts firm performance due to characteristics of a third-world economy with Nigerian firms operating in a volatile macroeconomic environment must carefully trade off leverage benefits and risks to remain profitable. In terms of tax management, effective tax rate and debt, ToT is directly relevant to Research Question 3 as it highlights the relationship between tax benefits from debt financing and the firm's effective tax rate in a tax-volatile environment like Nigeria, where firms are incentivized to optimize leverage for maximum tax efficiency. These impacts are also extended to the moderating role of tax avoidance in which ToT further explains how tax avoidance practices may enhance or distort the intended benefits of debt financing, thereby affecting firm performance as captured by Research Question 4.

Agency Cost Theory (AcT) allows one to examine the conflict between owners and managers which breeds problems peculiar to third-world organisational management and performance. For instance, in Nigeria, the separation of ownership and management in many listed manufacturing firms can lead to agency conflicts. AcT explains how these conflicts influence capital structure decisions, as managers may prioritise their interests over shareholder wealth. Also, in the use of debt as a governance mechanism, AcT highlights how debt can act as a disciplinary tool to align managerial behaviour with shareholder interests by reducing free cash flow available for managerial discretion. This provides a lens to analyse how debt-toequity ratios impact firm performance as captured in Research Question 1. Also, in information asymmetry and tax avoidance, AcT underscores the role of information asymmetry in tax avoidance strategies, where managers may exploit such asymmetries to reduce taxes at the expense of long-term shareholder value, influencing both leverage and performance as queried by Research Questions 3 and 4. Agency costs are particularly pronounced in Nigeria, where weak governance frameworks and regulatory enforcement exacerbate principal-agent conflicts, making AcT crucial to understanding capital structure decisions.

Market Timing Theory (MTT) equally offers significant insights. In addressing market conditions and equity financing, MTT explains how Nigerian manufacturing firms take advantage of favourable market conditions to issue equity, particularly during "hot" market periods. This is relevant in understanding the timing and volume of equity issuance in relation to firm performance as inquired by Research Question 2. Macroeconomic and sector-specific factors further lend their voice to the importance of MTT in capital structure. For instance, in Nigeria's often unpredictable macroeconomic environment, characterised by fluctuating exchange rates and inflation, MTT provides a framework for evaluating how firms navigate equity and debt financing decisions based on market timing. In effective tax rate and market dynamics, MTT ties into Research Question 3 by showing how firms capitalize on favourable market timing to mitigate the costs associated with high effective tax rates. By examining how market timing interacts with tax avoidance strategies, MTT offers insights into the moderating role of tax avoidance on capital structure and firm performance (Research Question 4).

#### 2.3.5.1 Relevance of Theories in the Nigerian Context

In terms of macroeconomic volatility, Nigeria's manufacturing sector operates in an environment marked by economic instability, currency fluctuations, and high borrowing costs. Each theory helps unpack how these challenges influence capital structure decisions and firm performance. Whereas with relevance to the business operating environment, the high corporate tax rates and inconsistent enforcement in Nigeria create incentives for tax avoidance. These theories, particularly ToT and AcT, are pivotal in understanding the interplay between taxation, leverage, and firm performance.

Emphasizing the nature of capital market development in third-world countries, Nigeria's underdeveloped capital markets limit access to equity financing. PoT and MTT provide critical insights into why firms prefer internal or debt financing and how market timing impacts their decisions. This is extended to the impacts on corporate governance with resultant weak governance structures and widespread agency conflicts in Nigerian firms are best explained through AcT, shedding light on the need for effective mechanisms to reduce agency costs and improve performance. As per policy implications, these theories collectively guide policymakers and regulators on how to foster a stable financial environment, promote equity market development, and implement tax policies that align with optimal capital structure decisions for sustainable firm performance.

### 2.4 Empirical Review.

2.4.1 Impact of debit-to-equity ratio on firm performance.

Abdullahi et al. (2023) explore the capital structure and financial performance of listed consumer goods firms in Nigeria. Abdullahi and others evaluated the effect of capital structure on the financial performance of listed consumer goods companies in Nigeria from 2017 to 2021. The population of the study comprised all consumer goods firms listed on the Nigerian Exchange Group (NGX) from 2017-2021. The methodology adopted by their study was the correlation research design, which was adopted because of its capacity to evaluate estimation effects. The strength of this method allows for the examination of variables without manipulation. At the same time, the population of the study consist of consumer goods firms listed on the Nigerian Exchange (NGX) from the period of 2017-2021 and are still on the Exchange as of 1st of December 2021. The authors further adjusted this population to nineteen companies listed on the floor of the NGX, while other firms in this sector were filtered out due to the inability of the researchers to access their financial reports. Equally, the annual reports from the AGM were utilised as secondary sources of data in ascertaining both the funding and performance parameters of the companies. The obtained data were analysed with the aid of OLS regression technique while holding the control variables. Findings from the panel result output revealed that the LTDTA and STDTA have positive and negative significant effects on the financial performance of consumer goods firms in Nigeria respectively. Based on the findings, the study recommends that listed consumer goods firms should increase their use of LTDTA as this will lead to an increase in their level of performance. In relation to the current objectives of this study, Abdullahi et al. found that the long-term Debt Instrument utilised by firms was responsible for the negative performance while advocating for a balanced mix of long- and short-term debt in order to reduce negative impacts on performance.

Islam and Iqbal (2022) explored the role of capital structure of a firm in determining firm performance. Having established the central role in its performance, although, there is more evidence of the negative relationship between capital structure and firm performance than a positive relationship. The authors based their assumption on the many theories which explain that positive relationship, but there is hardly any theory that explains the negative relationship; thus, there is a gap considering that previous studies have used accounting and market-based measures of firm performance arbitrarily and interchangeably presuming a high positive correlation between them which created a problem their study hoped to solved especially regarding whether these two types of measures are statistically correlated or not. Hence, Islam and Iqbal (20220) explored 285 non-financial firms listed on PSX for a period of 21 years from 1999 to 2019 with the mind that all the required pre-estimation diagnostic tests are used to ensure that the data are free from statistical problems. In relation to my study, there is congruency with the methodological approach using estimation techniques, i.e., Pooled OLS, fixed effects (FE) Model, RE Model, and GMM technique which largely correspond to estimation methods adopted in my study using the pre-estimation diagnostics.

In the result, the findings of their study showed that there is a weak correlation between accounting and market-based measures of firm performance which further showed the impact of capital structure on firm performance was invariably negative and statistically significant. The finding was on the assumption that market-based measures are mixed and statistically not so strong, which differed significantly from my current study giving it impetus for empirical evidence. More so, the moderating effect of size is negative which indicates that the impact of capital structure on firm performance of big-size firms is more negative than that of small-size firms further presents areas for inquiry which suggests a new rationale that is named mindset change theory to explain the negative relationship between capital structure and firm performance. This rationale states that if firm managers finance a new project by equity only, 127

then their objective remains to maximise the amount as well as the rate of return. However, if they have the option to finance a project by debt, then their objective changes; it becomes to maximize the amount of return in the neglect rate of return on the total invested amount as explained further in the text. The policy x implication of this research is that equity financing may be encouraged while debt financing may be discouraged to improve RoA at an aggregate level in an economy.

Debit-to-equity ratio as a form of a firm's capital structure has consequences on corporate financing via capital planning and structure. For instance, Okore and Nwadiubu, (2022) explored the impacts of capital structure on the profitability of food and beverage firms. The specific goals of the study were to assess the impact of the debt-equity ratio on the net profit margin ratio, gross profit margin ratio, return on equity ratio, and return on asset ratio, as well as to identify the impact of debt-equity ratio on each of these ratios. A causal research design was used in the study. The impact of the debt-equity ratio on gross profit, net profit, return on equity, and return on asset was studied using secondary data. All of the listed companies in the food and beverage industry made up the study's population. A sample of five publicly traded food and beverage firms was taken from the general population. These firms included Vita Foam, PZ Cussons, Unilever Nigeria, Cadbury, and Nestle Nigeria. Data were gathered from the individual companies' yearly financial reports, which were publicised. The dependent and independent variables were tracked from 2009 to 2018 throughout a ten-year period. In each of the four hypotheses, the dependent variables were gross profit, net profit, return on equity, and return on asset, while the independent variable was the debt-equity ratio. In an Eviews statistical package, the Panel Least Square approach was used to evaluate the data. The hypotheses underwent 5% level significance testing. The findings indicate that the debt-equity ratio had a favourable and significant impact on gross profit ratio, net profit ratio, return on equity, and return on asset. The study draws the conclusion that capital structure has 128

a favourable and significant impact on company performance. Therefore, the finding implies that enterprises and firms should improve the mixture of their capital structures in order to improve financial and overall corporate performance. I agree with Okore and Nwadiubu's (2022) findings and implications because the profitability of firms is a factor that is dependent on how effective the financing of the firm is and how much advantage a firm can take in the financing structure, they adapt to boost productivity and consequently profitability. Thus, the finding is binding on food and beverage firms and proves to be a consistent financial behaviour of firms in Nigeria.

We may consider the empirical evidence presented by Abdullah and Tursoy (2021) in the study of capital structure and firm performance in evidence of Germany under IFRS adoption utilising non-financial firms listed in Germany during the period 1993-2016. Abdullah and Tursoy's study attempted to investigate the evidence that there exists a relationship between firm performance and capital structure. In their method section, the extracted sample from the non-financial firms listed in Germany during the period 1993–2016 which took into account the European stock market transition to IFRS in 2005 in consideration to is also a shifting point that might have influenced the extent of the relationship. Findings from their result revealed that more than 60% of the total assets of German non-financial firms were financed through debt, i.e. they are highly leveraged when compared to similar countries' financing options at the time. Apparently, the findings are evidence supporting a positive relationship between firm performance and capital structure as their result suggests. Abdullah and Tursoy also found that within their sample, the increase in firm performance was orchestrated by IFRS adoption at the expense of a weakened relationship between capital structure and firm performance. Juxtaposing this with the aim and objectives of my current study is apparent that evidence in Abdulah and Tursoy's study supports a positive association between capital structure and firm performance is propelled by the benefits of the tax shield and perhaps the lower costs of issuing debt compared to equity. This evidence is in effect consequential to the effects of capital structure on firm's performance especially considering the funding methods (Debt-to-Equity Ratio) examined in this study.

In the same vein, Orji and Agubata's (2021) findings on the effect of debt-equity financing on firms' performance in Nigeria still rends support that the nature of capital structure and financing is consequential to organizational performance. In their study, Orji and Agubata used the variables equity financing (EF) and debt-equity financing (DEF) to quantify debtequity financing, while return on equity was used to analyse firm performance (ROE). To direct the inquiry, two hypotheses were developed, and the OLS Regression Model was used to conduct a statistical test of parameter estimations. Ex Post Facto design was used for the research, and the NSE Factbook, Annual Reports, and Accounts were where the data for the study came from. The study's conclusions demonstrate that, at a 5% level of relevance, debtequity financing has a significant and favourable impact on firms' performance in Nigeria. According to the study's findings, debt-equity financing enhances a firm's performance over time. Given this finding, although I agree with the hypothetical assumption that capital structure denoting financing options of firms is a determinant of financial and organizational performance; however, I disagree that firms may finance their investment operations with debts and equity and consider debt or equity only as a last resort based on Orji and Agubata' (2021) findings. This is because ideally, certain firm and business operations may be best suited for debt or equity and not necessarily as a last resort. Hence, the recommendation here should adopt financial structures based on what ideally favours some sectors, firms and their operational mandate in Nigeria.

Also, Tajudeen *et al.* (2021) found that there is a significant influence of capital structure on firms' performance in Niger which supports existing literature on the positive impacts of corporate capital structure on firms' financial and productivity performance. In 130

Tajudeen *et al.*'s study, their investigation focused only on the pharmaceutical industry in Nigeria focusing on firms listed on Nigeria's stock exchange between 2009 and 2017. In the method session, the study used a panel regression analysis with independent variables including DER, long-term debt ratio (LDR), short-term debt ratio (SDR), total asset (Size), and inflation rate as well as dependent variables representing proxied financial performance as RoA and ROE (INF). Only firm size was significant and adversely correlated with pharmaceutical firms' performance using return on asset, according to the fixed effect results in the two models. The findings show that there is no indication of a substantial relationship between the capital structure and the performance of Nigerian pharmaceutical companies. The significance of the two models that were used, however, suggests that more factors influence success in the pharmaceutical sector and that these factors need further study by other academics. Based on the study's findings, it was advised that pharmaceutical companies exercise caution when choosing their sources of funding.

Considering Tajudeen *et al.*'s (2021) findings, Ayange *et al.*'s (2021) empirical evidence on the effect of capital structure on firms' performance in Nigeria provided further support to the hypothesis that firms' capital structure is a determinant factor of organisational performance although there have been many contradictory findings due to the lack of a specific technique to assess the impact of the capital structure mix on business performance. In their method, they investigated the effects of capital structure using annualized panel data from 1999 to 2018 with a sample of fifteen listed non-financial firms from various sectors excluding the financial institutions because of the distinctiveness of their capital structures and the stringent legislative constraints on the types of funding they can choose. The firm's market and book values were measured as capital structure. Findings from the analysis indicated that Tobin's Q and the performance proxy ROE have a considerable impact on SDTA, Size, LDTA, and

TDTA, whereas RoA has a negative impact on LDTA, D E, and TDTA. Findings showed that Tobin's Q and financial success relative to other book values had a strong link. A more accurate indicator of performance during the reviewed period is Tobin's Q. The study showed that Nigerian businesses heavily rely on short-term loan financing, which supports the Pecking Order Theory. Considering that no single theory can adequately account for the impact of capital structure on companies' performance; I agree with Ayange *et al.*'s (2021) findings because they re-emphasized that economic environment and market forces peculiar to individual firms and organizational goals largely determine the type financing structure they may adopt to realize their objectives, these structures uniquely work best within a defined theoretical paradigm as found in this study where short-loan financing supported by Pecking Order Theory was realistic and favourable financing structure for non-financial firms in Nigeria.

Similarly, adopting a financing structure in line with the corporate and operational mandate was boosted in Mbonu and Amahalu's (2021) study on the effect of firm characteristics on the capital structure of insurance companies listed on the Nigeria stock exchange from 2011 to 2020. The study specifically looked at the relationship between the debt-to-equity ratio and firm size, liquidity, and revenue growth. In order to choose fourteen (14) listed insurance businesses in Nigeria, a purposeful sampling technique was used. In this study, panel data were used, which were gathered from the annual reports and balance sheets of sample firms for the years 2011 through 2020. A research design known as ex post facto was used. To assess the study's hypotheses, inferential statistics utilising the Pearson correlation coefficient and Panel least square regression analysis were used. According to the findings, at a 5% level of significance, Firm Size has a considerable positive impact on Debt-to-Equity Ratio, whereas Liquidity and Revenue Growth have a significant negative impact. Considering the finding, I agree capital structure is a major determinant of organizational 132
financial outcomes and that, insurance companies like every other firm in other sectors should build assets which will enable them to take advantage of certain financing options in order to guarantee a positive financial outcome irrespective of their financial options or type of capital structure planning.

Still focusing on evidence which supports that capital structure is a determinant of organisational performance outcomes, Nelson and Peter (2019) did an empirical analysis of the effect of capital structure on the firm performance of microfinance banks in Nigeria from 2009 to 2018. The authors used explanatory variables (return on equity) to represent business performance and explained variables (debt-to-equity ratio, long-term debt ratio, and total debt ratio) to describe capital structure. The analysis employed a combination of regression and descriptive statistics. According to the findings, there is a negative and insignificant correlation between the debt-to-equity ratio and return on equity, a positive and significant correlation between the long-term debt ratio and return on equity, and a positive and significant correlation between the total debt ratio and return on equity. The findings also showed that the aggregate effect of the explained variables on firm performance, as measured by return on equity, is statistically significant, with an F-statistic of 37.16701 and a probability of 0.026372. I agree with the findings although the banking sector is regulated with a financing mandate because certain financing options may not be profitable with certain organisations given their organisational leverage and circumstances. Hence, Nelson and Peter (2019) provide consistency to the argument in the literature that firms such as microfinance banks in Nigeria should devise capital structure strategies according to their strength which is effective to achieve better performance.

In another study, Eriki and Osagie (2017) investigated the effect of the debt-equity mix on the financial performance of downstream oil and gas firms in Nigeria. Covering a period of 5 years, the authors assessed a composite of twelve financial statements of oil and gas firms listed on the Nigerian Stock Exchange and used the fixed effect model technique and Hausman test to evaluate ROA and ROE as performance indicators with the help of panel regression statistics. In their study, consideration factors included debt to capital (DC), debt to common equity (DCE), debt to the asset (DA) and long-term debt to common equity (LDCE) which served as explanatory variables. At the end of the data analysis, the result was indicative that although there is a negative effect between DC and LDCE, the effect wasn't significant for firm performance using ROA and ROE. However, a positive and significant impact on firm performance was found using DA and DCE.

In a similar study, Nuryani and Sunarsi (2020) evaluated the effect of the current ratio and debt-to-equity on dividend change at PT, Gaja Mas, and Indonesia. In the method session, the authors adopted explanatory research methods which involved the use of regression testing and statistical analysis in the determination of the hypothetical testing. At the end of the analysis of data in the regression model, findings revealed that the debt-to-equity ratio like in the model of the current investigation by the author was associated with a significant impact on the estimated dividend which accounted for 34.2% explanation of the total variance effect of the model. Also, the current ratio and debt-to-equity ratio were also significantly impactful on dividend conversion with a 47.8% total explanation of the variance during the hypothesis testing. Given the findings, I agree that debt usage and equity dynamics in corporate financing would have impacts on organisational outcomes including dividends (as confirmed in Nuryani and Sunarsi, 2020), performance as hypothesised in the current study notwithstanding econoenvironmental differences between the locations of the compared studies. Comparing this finding with the hypotheses of the current study, findings boost the expectations of the current study that on corporate capital structure, debt-to-equity ratio is a critical determinant of corporate financial performance. In this perspective, it is considered that the divergence of business cultures and laws bearing in mind the economic difference between Nigeria (the

current location of instigation) and Indonesia being reviewed. Despite these differences, findings are congruent with the DER as a determinant of the corporate financial performance of firms in Nigeria. Therefore, the current empirical findings are found to be supportive of the current hypothetical model and objectives of the current study as earlier proposed.

Furthermore, Hidayat et al. (2020) examined the effect of earnings per-share (EPS), DER and ROA on stock prices as a case study in Indonesia. The purpose of their study was to explore and analyse the effect size of EPS, DER and ROA on the stock prices of manufacturing firms listed on the Indonesian Stock Exchange between 2015 and 2017. All the factors' EPS, DER and ROA were deemed indices of capital structure in nature and affect the financial performance of corporate organisations. The authors explored the use of quantitative design and descriptive design. The sample constituted financial statements of corporate organisations in the manufacturing sector that were listed on the floor of the Indonesian Stock Exchange in 2015 and 2017. Also, in the method, multiple linear regression analysis was adopted to be used in ascertaining partial and simultaneous influences which in this study denote the influence of EPS, DER and ROA on stock prices in the manufacturing sector. After analysis of data, the results were indicative that EPS has a positive and significant influence on the stock prices of the manufacturing firms under study whereas DER and ROA had a positive impact which did not reach significant proportions. I disagree with the findings of Hidayat et al. (2020) that only earnings per-share (EPS) and net DER and ROA impacted stock prices in Indonesia; this is because stock prices are an indicant of firm financial performances which is similar to the hypothetical model of the current study. This is so because higher stock prices indicated better financial and organisational performance including organisational integrity and overall success factor. Hence, impacting stock prices is appreciated as a good performance outcome from organisational production such that effective management of debt and equity financing and ROA ultimately increases performance and effectiveness which in turn improves stock prices.

The unexpected insignificant impacts of DER and ROA are not surprising owing to possible discrepancies due to differences in the different business environments and laws such as could be compared between Nigeria and Indonesia. In this circumstance, corporate performance could be attributed to the rising value of the stock of the companies in the manufacturing sector.

Furthermore, Ramli, et al. (2019) explored the determinants of capital structure and firm financial performance using a PLS-SEM approach as evidenced from Malaysia and Indonesia. In their study, they examined the impact of capital structure determinants on firm financial performance together with the mediation effect of firm leverage in Malaysia and Indonesia over the period of 1990 to 2010. After analysis of the data they obtained, the results of the study indicated that there are certain capital structure determinants which are directly effective on firm financial performance. The authors equally observed that there was a positive significant correlation between firm leverage (inclusive of debt and equity advantages) and firm financial performance only with the Malaysian sample. However, with the Malaysian sample, performance indicators were heightened because of the firms' apparent use of external financing instead of internal financing. Their results further indicated that with the Malaysian sample rather than the Indonesian sample, firms' leverage plays a mediating role; this is because the characteristics of firms' leverage in Malaysia had an indirect impact on asset structure, growth prospects, liquidity, non-debt tax shelter, and interest rate. The equality of the parameter estimates was further tested using additional analysis for the PLS multi-group analysis (MGA) with the outcome emphasising there are notable differences between Malaysia and Indonesia in a number of attribute factors that are predictors of capital structure and firm financial performance. About the current study, the finding justifies evidence that the structure of financing or capital is much more dependent on organisational factors which might gift some organisations certain advantages in financing over others through leveraging and influence.

Although, Eriki and Osagie's (2017) findings were narrower in determining which type of debt and which type of equity impacted the observed performance changes; however, the similarity of objectives, business environment (Nigeria) and the semblance of organisational climate and structure between the two studies support the veracity of the current finding in the light of understanding corporate financial behaviour of firms in Nigeria. Considering this, the study contributes to providing an understanding of the findings of the current study on capital structure impacts on firm performance. Thus, the outcome of Eriki and Osagie's (2017) finding on the effect of the debt-equity mix on the financial performance of downstream oil and gas firms in Nigeria aligns with the position of the current study because it hints at aspects of debt and equity as capital structure dynamics that enhanced certain measurable performance in the firm. Equally, the finding has significant importance to the current study because in relation to the current study, the finding signals and emphasises the use of the right mix of debt and equity financing as capital structure in corporate organisations as hypothesised in the current study which sought to evaluate the impacts of debt-to-equity ratio on firm performance.

Again, a search for empirical evidence was extended to Akeem *et al.*'s (2014) study which evaluated the effects of capital structure on manufacturing firms' performance in Nigeria. Their study explored how capital structure affects a firm's performance using a case study of Nigerian manufacturing firms from 2003 to 2012 in order to offer a critical evaluation of the necessity and significance of capital structure. The effects of various important variables, such as RoA, ROE, Total Debt to Total Asset (TD), and Total Debt-to-Equity Ratio (DE), on business performance were examined using descriptive and regression research techniques. Data generated from ten (10) manufacturing companies were used as secondary data. According to our research, total debt and the debt-to-equity ratio have a negative correlation with company performance. I agree with the findings because, given that borrowed capital can increase a company's value, businesses can employ equity more frequently than debt to fund 137 their operations. This is because the firm's capital structure is optimal at this point all things being equal, such that firms can determine the point at which the weighted average cost of capital is minimal and maintain that gearing ratio. The position of the finding is consistent with the literature and the current hypothesis that the dynamics of a firm's capital structure and policy are tantamount to its financial performance as well as its overall organisational performance.

In relation to the current study, I agree with Ramli et al's (2019) finding that financing styles including internal and external funding styles as observed in the Malaysian and Indonesian samples are functions of organisational leverage which impact the liquidity, nondebt tax shield and interest rates which on the long run impact of the organisational performance. Depending on the nature of the organisation, its goals, and industry and sector requirements for optimum performance, debts may be more profitable to certain firms whereas equity may be suitable to others in the long run. Hence, the finding is explanative of the current proposed hypothetical model seeking to ascertain the impacts of DER on organisational performance.

## 2.4.2 Impact of the term structure of Debt on firm performance.

Nazir, Azam and Khalid (2021) investigated the impacts of debt financing on firm performance as empirical evidence from the Pakistan Stock Exchange. The objectives of Nazir *et al.*'s study were to explore where there is a correlation between the listed firms' debt level and their performance on the Pakistan Stock Exchange (PSX) during a five-year period. To carry out their study, Nazir *et al.* utilised ordinary least square regression and fixed and random effects models in the method section to analyse a cross-sectional sample of 30 Pakistani corporations operating in the automobile, cement, and sugar sectors. The duration under consideration was from 2013 to 2017, and the total number of firms sampled was 150. The 30 138

non-financial enterprises that operated in Pakistan's automobile, cement, and sugar industries between 2013 and 2017 provided the data for this study. The Standard Capital Database website and the firms' financial filings were utilised as secondary data. Analysing Pakistan's economic importance as the 30th largest economy in the world at the time of the authors' study, it followed that approximately 20% of the nation's output is produced by the manufacturing sector, as reported by emergingpakistan.gov.pk. In 2019, 23.67% of Pakistan's workforce was employed in the manufacturing industry, and according to the authors, nearly 3% of Pakistan's GDP comes from the auto industry. Also, in the vehicle industry, there was huge potential for sales growth, a sign of rising incomes and living standards. It is also noted in the study that 5% of the GDP is contributed by the cement industry while the sugar industry, which makes up the bulk of the food sector, accounts for approximately 1% of the nation's GDP and 18% of its large-scale enterprises. In the value-added sector, 3% there is about 2.5% of agriculture of Pakistan's GDP, which is also accounted for by the sugar industry. As a result, these three industries accounted for about half of the nation's GDP; consequently, Pakistan's industrial sector contributed significantly to its economic growth. Going by these data, in the method section, the model included RoA and NPM as two of the profitability factors. At the same time, Sales growth (SG), tangibility (TNG), long-term debt (LTDA), short-term debt (STDA), and firm size (FS) are all independent variables. In order to investigate the relationship between debt financing and firm performance, the data were analysed using fixed and random effects models. The unobserved behaviour of particular cross-sections and time were addressed by the distinction between FE and random effects (RE). Due to historical changes in the observations, the fixed impact intercepts might be different in each cross-section in line with the statistical contentions of Greene (2012). Furthermore, the Hausman test (1978) was used to determine which of the two models is more precise. This test assesses the amount of statistical significance between the estimators, in this example, the FE or RE models. After analysis of the data, the

findings revealed that there were both short- and long-term debt consequences on the firm's performance, especially regarding profitability. The result was indicative of negative and significant impacts on the outcome, implying that the more debt financing, the less the firm's profitability. These findings thus reiterated the implications of agency issues, which, if not managed well, may likely lead to a high debt policy, resulting in lower performance. However, Nazir et al findings indicated that both sales growth and firm size have positive effects on the profitability of non-financial sector companies. From their result, it is obvious that there are negative impacts associated with debt financing on an organisation or firm's profitability, which, therefore, should inform the vigilance of management and the organisation to always ensure that, debt financing is satisfactorily managed at an acceptable level.

Although the finding may not be generalised outside Pakistan's automobile, cement and sugar sectors, the findings show consistent evidence that capital structure dynamics in terms of the level of debts and equity could have adverse and unfavourable impacts on organisational outcomes, including productivity and profitability. This aspect of their findings provides huge support for the proposed model of this study, which the researcher sees as a consistent link along with the paradigms seeking to understand how debt finance impacts the organisation or corporate outcomes, notably performance.

Li *et al.* (2021) found evidence in China which supports the relationship between "Debt Maturity and Corporate Performance. Their study found that firms with longer-term debt have higher profitability and better financial performance than those with shorter-term debt. However, the sample size is limited to only 77 listed firms in China, which may not be representative of the larger population. In Nigeria, Saka *et al.* (2020) explored the impact of debt structure on financial performance: evidence from Nigerian firms and equally found a positive relationship between long-term debt and firm performance but a negative relationship between short-term debt and firm performance. However, the sample size is small and only includes firms in Nigeria, which may limit the generalisability of the findings. In the United States of America, Zhou *et al.* (2021), while examining the impact of capital structure on firm performance evidence from the United States, found a negative relationship between the debt-to-equity ratio and firm performance, indicating that firms with high levels of debt have lower profitability and financial performance. However, the sample size is limited to only 50 listed firms in the United States, which may not be representative of the larger population.

The impact of debt capital structure on firm performance can be seen in Trong and Nguyen's (2020) study on firm performance investigation using the moderation impact of debt and dividend policies on overinvestment. The author conceptualised debt, dividend and investment policies as constituents of the company's important financial decisions which are indicants of firm performance. The authors focused on the problem of overinvestment as a defining factor with the potential to negatively impact a firm's operations and productivity and hypothesised that debt and dividends could moderate and mitigate the negative impacts of overinvestment on the performance parameters of organisations in Vietnamese listed companies. The design of the method utilised financial and non-financial listed companies in Vietnam, namely, the Ho Chi Minh and Hanoi Stock Exchanges between 2008 and 2018. For the data collection, database searchers, a total of 669 listed companies were sampled. Based on the objectives and goal of the study, their study investigated overinvestment through investment demand function utilising a dynamic model in the application of the SGMM method in handling the problem of endogeneity as caused by the lagged dependent variable. After analysis of data, the findings reveal that the firm performance of companies listed in the Stock Exchange was negatively related to the overinvestment index such that upon policy combination of the dividends, capital structure dynamics of debt were lessened due to the impact of prevailing interaction of each policy due to substitution of debt and dividend policy.

Although the finding highlighted the impacts of debt capital structure, which can be linked to the firm performance, the obvious shortcomings of the findings, especially in the measurement of overinvestment, do not make it ideal in explaining the relationship of capital structure with a firm's performance. In their study, for instance, the overinvestment criteria were measured as an indirect investment demand function; the shortcoming is that the measures are only indicators of signs that a company is overloaded with overinvestment problems and may not be in the position to determine the actual overinvestment in reality. There is also the problem of higher multicollinearity in the use of the study's interaction variables, which are capable of adjusting the signs and significant levels of the variables as hypothesised in the interaction and moderating models. In line with the objectives of the current study, Trong and Nguyen's (2020) study provided weak support for the relationship between the utility of debt policy and the limiting of excessive cash flows, which can, in the long run, impact the problem of overinvestment. Although firms can reduce such agency-related problems if they enhance the quality of their corporate administration, especially in the government-enabled-transparent financial sector and capital market albeit the fact that other social issues which come with overinvestment may also be associated with long-term harms can lower organisational productivity and performance.

However, there was more evidence in Pham and Nguyen's (2020) findings that debt financing impacts firm performance with board independence as a moderator. Pham and Nguyen's study focused on linking evidence which supports the interrelationship between debt financing and the performance of emerging market firms. The authors utilised an empirical model in which the firm's accounting profitability is a dependent variable and the independent variables are debt financing, board independence, the interaction variable made of debt financing and board independence as well as various control variables. Their analysis was based on a panel data set of 300 listed firms in Vietnam between 2013 and 2017. The authors attempted to investigate in two different phases of panel data estimations the effects of debt financing on firm performance. In the first analysis, the study ascertained the impacts of debt on the profitability of firms using the ROE criteria in the measurement, while for the second analysis, empirical data were analysed to find the impacts of agency cost in the interrelationship. In the methodology, the authors collected statistical data from audited financial statements from 2013 to 2017 of all firms listed on Vietnam's stock market (Ho Chi Minh Stock Exchange and Ha Noi Stock Exchange). The data was extended to 2017, covering 700 enterprises listed on the stock exchange. Considering that there are distinctive corporate structures and revenue models as indicated by an extraordinary performance indicator in the financial sector, organisations and firms in the financial sector, such as commercial banks, real estate, securities and insurance firms, were excluded from the list in line with the propositions of Le and O'Brien (2010) on financial firms' peculiarities and structures. The data obtained from the final itineration were thus reduced to yield 900 observations for data analysis for the study. The result from the findings was indicative that in consideration of manufacturing firms traded in the BSE 200 Index from 2009-2016, there was a significant and negative effect of debt on firm performance, implying that the greater the debt exposure, the less the organisational productivity and efficiency. In ascertaining the magnitude of the effect of debt, it was found to be positively affecting the agency cost, which was rated based on 'general and administrative expenses', implying that the negative effect of debt on firm performance is reinforced and justified as debt is also found to elevate the agency costs for the firms.

Mamaro and Legotlo (2020) explored the impact of debt financing on financial performance: evidence from retail firms listed on JSE for a ten-year period, from 2010 to 2019. The ROE is used as the profitability measure and is the dependent variable, whereas Lagged ROE (LROE), Long-Term Debt to Total Asset (LTDA), and Total Debt to Total Asset (TDA) are used as independent variables and Size and Sales Growth is used as control variables. The FE, RE, Pooled Effects, and Generalised Least Square (GLS) panel data regression analysis models were applied using the financial performance ratios. The study discovered that LTDA and SZ negatively affected financial performance with a statistical significance of 1% and 5%, respectively, while LROE, TDA, and GRS strongly influenced financial performance (ROE) with a high statistical significance of 1% level. Given the evidence of this part of the study, the current researcher's model finds explanation and support for expanding understanding in this area through this examination because when retail businesses, like other sectors, decide how best to finance their assets, they boost their profits, which is a measurable aspect of firm's performance. Thus, the findings provided evidence that financing options chosen by firms in relation to their circumstances and leverage can determine how profitable and successful such firms might be.

In another study, Li (2020) evaluated the effects of external debt financing and internal financing on firm performance as empirical evidence from automobile-listed firms. Li's research interest was guided to explore the impacts of external debt financing and internal financing on firm performance using panel data from listed companies in the automobile industry during the years from 2011 to 2019. To address the problem of the study, Li focused on five different factors, which include return on equity, return on asset, Tobin's Q, return on capital employed, and return on invested capital. These factors were used to measure the performance of automobile-listed firms. To ascertain the level of external debt financing, three different factors were utilised; they are short-term debt ratio, long-term debt ratio and total debt ratio. On the other hand, for the fourth independent variable, the internal financing ratio was used whereas the control variables were assigned as tangibility, size, liquidity and asset growth. After analysis of data, the results confirmed that there was a negative relationship between short-term debt ratio (STDR), long-term debt ratio (LTDR), and total debt ratio (TDR), as independent variables with the firm performance, which was measured by ROE, RoA, Tobin's '

Q, return on capital employed (RoCE) and return on invested capital (ROICI Li also found that the internal financing ratio (IFR) is not only increasingly important for automobile firms, but also positively affects ROE, RoA, Tobin's Q, RoCE and ROIC which define a firm's performance for all sectors. Li's finding, in line with the agency theory, highlights the negative relationship between debt ratios and firm performance, which are indicants that suggest that monitoring the role and impacts of debt financing is not substantial for any organisation or corporation to progress and thrive. It could be seen that debt financing exacerbates the conflict between shareholders and creditors as a direct consequence of decreasing firm performance. Also, considering the Pecking order theory, the positive relationship between the internal financing ratio and firm performance indicates that internal financing has the lowest capital cost and avoids insufficient external financing caused by information asymmetry, thus benefiting firm performance. In relation to this study, Li's model is typical of the researcher's proposed model albeit having little differences in actual contexts and the location of the studies. Thus, Li's finding provided concurrent evidence supporting this study's model because the empirical evidence provided an understanding of the consequences of the outcomes of different capital structure dynamics, especially regarding the use of debts in long-term financing and the use of equity in short-term financing. Whichever is used, there are associated outcomes which are capable of impacting certain organisation performance criteria such as value, return to assets, return to equity, etc., with the current focus being on financial performance.

In a study by Al-Nuaimat *et al.* (2020), the author examined the impact of debt maturity structure on firm performance: evidence from Jordan and found that firms with longer-term debt have higher profitability and better financial performance than those with shorter-term debt. However, the sample size is limited to only twenty firms from Jordan, which may not be representative of the larger population. This finding supports the importance and critical role of a type of finance on a firm's performance especially regarding the term structure of debt.

Also, Ali *et al.* (2021) evaluated this claim while investigating "Debt Maturity, Risk and Performance: Evidence from Pakistan" Ali and Co found a positive relationship between longterm debt and firm performance but a negative relationship between short-term debt and firm performance. However, the sample size is small and only includes firms in Pakistan, which may limit the generalizability of the findings.

In view of Pham and Nguyen's (2020) findings, there is greater evidence that debt financing impacts firm performance negatively in the under-studied organizations in Vietnam such that the negative significant coefficient found implies that debt structure could harm the organization is not moderated due to its controllable agency costs and may be subject to increasing a firm loses as the debt exposure increase the financing underperformance. Based on the part of Pham and Nguyen's (2020) findings which linked debt financing as a form of capital structure and whose impacts affect a firm's performance, the researcher adopts this evidence as supportive of the fact that debt financing as much as they are good has also potential harm to the organisation. This implies that while it is good for some firms in certain economic scenarios, it may not be good for other firms in different economic scenarios because when it is not managed properly because of its inherent agency cost. The agency's costs are synonymous with reduced organisational performance as a result of reduced profit, productivity and reduced earnings and value due to the cost of the debts. The current researcher, therefore, finds some parts of Pandey and Sahu's (2019) explanatory to the capital structureperformance model proposed in the current study.

Also, an empirical examination carried out by Ayuba *et al.* (2019) evaluated the effects of financial performance, and capital structure on the Nigerian Stock Exchange on a firm's value. The study benchmarked exchange as of 31st December 2017 extending its examination to 27 quoted insurance companies covering a duration of years starting from 2012 until 2017 end. The factors under investigation were explored as determinants of capital structure

outcomes which were proxied to financial performance; the determinants were itemized as RoCE, Return on Assets denoted as (ROA), Return on Equity here denoted as (ROE), Shortterm debt/total assets (SDTA), Long-term debt/total assets (LDTA) and Total Debt/Total Assets (TD/TA) proxied capital structure. Furthermore, the natural logarithm of the total assets was utilised to proxy the Company's size whereas Tobin's Q was utilised to proxy the organisational value. The age of the organisation in terms of the number of operating years and duration of products or service provision was utilised to provide a control variable, which was denoted as a variable called the company's incorporated period, which denotes statistical years of existence recognition. In order to analyse the impacts and association among factors, in the design approach, the study adopted ex-post facto research and a longitudinal panel. In the longitudinal panel, there were time-series and cross-sectional data which were analysed using appropriate statistical approaches. Analysis of the data culled from the study largely employed descriptive statistical methods and analysis of regression. After analysis of their data, the result revealed that Tobin's Q was significantly impacted by the determinants (RoCE, Return on Assets denoted as (ROA), Return on Equity here denoted as (ROE), SDTA, LDTA and Total Debt/Total Assets (TD/TA) proxied capital structure) except Return on Capital Employee (RoCE) which yielded a positive but insignificant impact on Tobin's Q denoting low impact of effects. From this happenstance, their finding is indicative that the determinants have positive and significant effects on insurance firms' value in Nigeria implying that performance was impacted significantly. If insurance companies in Nigeria are to utilise the short debt approach in their capital structure, they stand a higher chance of improving their performance which will be mirrored in greater organisational value. On another note, management should strive to sustain leverage of total assets which will boost both organisational size and value.

Going by Ayuba *et al.*'s findings, the proposed model of the current study is largely an extension of the frontiers established by Ayuba *et al.* which re-emphasised the importance of

the dynamics of capital structure and their long- and short-term impacts on the Nigerian Stock Exchange firms' value. This could be understood in the light of the fact that a firm's value is also indicant of performance such that the greater value a firm has typifies greater organisational performance including a healthy financial outlook and equilibrium. In context, Ayuba et al.'s model, like the proposed mode of this study, implies that whichever method of financing or structure is used, the mixture of debt and equity has consequences on the corporate outcome, whether it is the return on assets, return on equity, earnings-per-share, firm value or organisational performance. The bottom, as mirrored in Ayuba's study, is that more consistent performance signals greater value for stocks listed on the floor of the Nigeria Stock Exchange and, hence, more performance. Thus, Ayuba's study, in light of the current study, can be utilised in understanding the impacts of capital structure, especially debt ratios, on organisational or corporate performance. Therefore, their study can be used in understanding the proposed hypothetical models of the current study. In relation to the current study, it is indicative that various paths to the capital structure have various organisational outcomes in terms of measurable performance and value. Firm value as an indicant is part and parcel of performance parameters and indications. The finding, therefore, supports the initial hypothetical statement that capital structure will determine a firm's organisational performance and value. Hence, the tenets of the current examination are in line with the expectation of literature on the importance of the capital structure of firms, especially in private-sector establishments. Thus, the hypothesis will confirm previous assumptions regarding the impacts of capital structure in different business climates such as Nigeria.

Equally, Pandey and Sahu (2019) carried out a study in which they ascertained the interrelationship of debt financing, agency cost and firm performance from the Indian listed companies. Pandey and Sahu's study attempted to document the impact of debt financing on firm performance in two different phases of panel data estimations. The effect of debt on firms'

profitability measured by 'return on equity' was ascertained in the first analysis of data whereas the reason behind such impact by introducing agency cost was ascertained in the second phase analysis. Pandey and Sahu's study focused on making attempts to provide statistical evidence that there is a relationship between the magnitude of debt, agency cost and performance of Indian manufacturing firms. In the method section, the study examined the relationship among variables from data extracted from the BSE 200 Index of India in which 91 manufacturing firms were used as panel data for the period of 2009 to 2016. Also, there was the use of secondary data collected from the financial database software, namely ACE Equity developed by Accord Fintech Pvt Ltd, Mumbai. In setting the parameters for the analysis, firms' leverage ratio (FLVR) represented the magnitude of debt financing by firms. The FLVE denotes the ratio between total debts to total equity of firms. Two derivative variables, general and administrative expenses, were used to refer to the agency cost, while the percentage of total sales of a firm and AUR, implying the ratio between annual sales to total assets of firms, was also indicated. In the analysis of the data, Pandey and Sahu focused on testing the effect of debt financing on the sampled firms' performance using two practical procedures: the direct effect of leverage on firm performance measured by ROE and ascertaining the impact on agency cost of firms. Added to the dependent and independent variables were other variables of interest denoting firm characteristics. The variables were: the age of the firm (FA), size of the firm (FS) and liquidity position of the firm (FLQ) measured by quick ratio. Variance inflation factor (VIF) was also introduced by the authors to check the presence of multi-collinearity among the independent variables. To analyse the data, Pandey and Sahu utilised the application of the ordinary least square model to determine the fixed effect and random effect models as regressions models. In addition to these effects, the study equally estimated the restricted F test, Lagrange multiplier test and fittest model using the Hausman test for the three-panel data estimations. Another demographic analysis was also carried out, such as central tendency,

mean, and measures of dispersion, including standard deviation, maximum and minimum value, which are estimated to understand the basic nature of the data used. At the end of the analysis, findings were indicative that among the manufacturing firms traded in the BSE 200 Index from 2009–2016, there is evidence of a significant and negative effect of debt on firm performance. Furthermore, the study found that the magnitude of debt is also found to positively affect the agency cost measured by 'general and administrative expenses. So, the negative effect of debt on firm performance is reinforced and justified as debt is also found to elevate the agency costs for the firms.

From the evidence in Pandey and Sahu's findings on the relationship between debt financing and firm performance, the current study aligns theoretically and finds the grounds to expand empiricism using its methods and furthering literature support on the model, especially on the nature of capital structure significantly impacts on the organisational performance. This is because their study provides an impetus for the current study as it statistically established underpinning evidence which once more emphasised the importance of adopting the right frame of capital structure for organisational productivity in accordance with industry demands. Consistently, literature is emphatic that higher debts most likely increase the chances of negative impacts on organisational performance. The position of literature is also maintained in the current study seeking to ascertain the relationship between debt financing and firm performance in companies listed on the Nigeria Stock Exchange.

Given the crucial role debts increasingly play in constructing the financial structure of multinational enterprises and the notion that debt financing has gained considerable prominence in recent years, Jones and Edwin (2019) evaluated the effect of debt financing on corporate performance as a study of listed consumer goods firms in Nigeria. The comparison of debt financing and corporate performance in the debt finance literature makes it clear that debt financing can affect corporate performance. We explored a more robust combination of

debt finance options in modelling corporate performance in contrast to the narrow measures of debt financing that are typical with most research that has been conducted on the debt financeperformance dynamics. Based on information extracted from the audited annual reports of the fifteen (15) consumer products companies listed on the Nigerian Stock Exchange (NSE) for the years 2006 to 2017. According to the panel regression technique's findings, the performance of Nigerian consumer goods companies is positively impacted by total debt, long-term debt, and short-term debt-to-asset ratios. This particular aspect of the findings as related to the use of debt, whether long-term or short-term, supports the D/E-performance model of the current and provides the research basis for re-examination in different contexts utilising different methods. The researcher, therefore, aligns the model as described above because Nigerian businesses tend to lessen their reliance on short-term debt, which makes up the majority of their leverage, and put more effort into creating internal strategies that would help them perform better.

Furthermore, it is denoted that the term structure of debt is another capital structure policy which may likely impact organisational or corporate performance. There is empirical evidence which supports the effects of the term structure of debt which helps to support the current hypothetical model of this study. For instance, Nelson and Peter (2019) carried out an empirical examination using data from microfinance banks in Nigeria on how capital structure impacts corporate or organisational financial performance. The study centred on providing evidence for accepting or flawing the debate on the relationship between capital structure and performance given establishing factors in corporate finance which weigh on the fiscal performance of corporate organizations in Nigeria. Their study was domiciled in the Nigerian banking sector where data was culled for the study. The duration was 10 years and the years in focus were from 2009 to 2018. The methodology for the study uses the determinant variables of the study (debt-to-equity ratio - DER, long-term debt ratio -LTDR and total debt ratio -TDR)

as factors of capital structure and evaluating their impacts on the criterion factor (return on equity - ROE) was used to denote firm's financial performance. To analyse these impacts, the study implied descriptive statistics and utilised the analysis of regression model statistics. After analysis, the results revealed that DER and ROE have a negative association, which was not significant, whereas a positive relationship was found between LTDR and ROE, although this negative relationship was not significant again. However, its statistical data revealed that between TDR and ROE exists a positive and significant relationship. Confirming the findings, the F-statistic was 37.2 with a probability of 0.03, which is an indication of 37.2% of the total explained variance on corporate fiscal performance when measured under the parameter of ROE.

Judging from the model in Nelson and Peter's (2019) finding, which demonstrated that capital structure, especially those relating to the usage of debt-to-equity ratio financing, impacts significantly corporate or organisational financial performance, the current study could be said to find support and extend the context of Nelson and Peter's evidence among the Nigerian sample. This is because depending on industry and sector requirements, in this case, the bank sector, which is capital-intensive, long-term debt ratio was found to be more beneficial to invested equity than other financing mixes between the use of debt and equity financing. This holds that the demands of industry and organisational leverage are the likely factors that may determine which financing or capital approach may be suitable and profitable for organisational financing and capital structuring. In relation to the current study, the findings provide a robust antecedent in anticipating the impacts of debt-to-equity dynamics of capital structure planning of corporate organisations and firms in Nigeria. In view of the similarity of the studies and business environment, the current study may be complimentary to the findings above, and thus become helpful in filling gaps in this area as organisational attitudes in the corporate workplace in Nigeria.

In another study, Aziz and Abbas (2019) explored the effect of debt financing on firm performance as a study of the non-financial sector of Pakistan. The authors' focus was on the association of different debt financing on a firm's performance in the financial and nonfinancial sectors. Firms were selected from fourteen sectors of Pakistan, and secondary data was collected from the fourteen different sectors in the Pakistan Stock Exchange. The duration of the study was from (2006 to 2014) covering nine years. After analysis of data obtained from the field, the results of the study indicated that debt financing has a negative but also significant impact on firm performance in Pakistan. Consider that the result established a relationship between EPS and STDTA and found that this relationship was positively insignificant. Other findings from the study indicated that short-term debt was associated with an increase in EPS rather than long-term debt financing and this relationship (LTDTA and EPS) was negatively insignificant. The finding implies that long-term debt decreases the earnings of the companies in contrast to short-term debt. Thus, TDTA and EPS relationship was also insignificant and negative whereas, at a .01 (1%) level of significance, the relationship between firm size and EPS is significant and positive. This is a result of firm size increases when companies are achieving a greater volume of economies leading to the enhancement of their earnings. In their research, the typical relationship between EPS and sales growth is significant and positive at 0.01 (1%), signalling a high level of accuracy. Comparing the growth of assets in the model, Aziz and Abbas found that asset growth and EPS relationship equally share positive and insignificant coefficients at the time, a significant level of 0.01 (1%) was also confirmed for the asset turnover and EPS relationship. Furthermore, 0.01 (1%) was also ascertained for the negative relationship between the DE ratio and EPS. In relation to the RoA insignificant negative relationship was associated with STDTA; the same as in the relationship between LTDTA and RoA. An equally negative and insignificant relationship was found between TDTA and RoA, but a positive and significant relationship was found between firm size and

RoA at a 0.01 significance level (1%) because a firm's economies of scale are usually increased by an increase in firm size and turn, enhances performance index of organizations. Other organizational indexes which were confirmed significant at 0.01 significance include the relationship between RoA and sales growth and the association of asset turnover and RoA. However, although the relationship between asset growth and RoA was positive, it was not significant. As regards the debt-to-equity and return on assets, a negative significant relationship was found at a 0.01 (1%) level of significance. Other relationships ascertained from the study include positive and significant relationships at a 1% significant level between ROE and STDTA, between ROE and firm size, and between LTDTA and ROE. In view of the correlation of ROE and TDTA, a negative and significant correlation was confirmed at 0.05 (5%) level of significance. The relationship between sales growth and ROE is positive and significant at a 1% significant level: the same as ROE and Asset turnover. Asset growth and ROE relationship are positive but insignificant. The relationship between the DE ratio and ROE is negatively significant at a 1% significant level. Summing it all, it is apparent that long-term debt and short-term debt decrease the performance of the companies in accordance with the industry and sector requirements and goals of the organization.

Regarding Aziz and Abbas' (2019) finding, there is a possible affinity between their model and those proposed in the current study especially concerning the impacts of DE on the financial and corporate performance parameters of organisations in Nigeria. Hence, to a large extent, the proposed model of my study is supported by Aziz and Abbas' detailed analysis which demonstrated how capital structure mix impacted corporate financial performance and the overall productivity performance of an organisation. Their finding, which detailed patterns of debt-to-equity ratio finance and policies following its deployment, could support that the method of debt utility, whether it is long-term or short-term, could impact return on assets and investors' earnings per share (EPS). In relation to the current study Aziz

and Abbas' study seeking evidence to confirm the hypothetical model on the impacts of DER on organisational financial performance is consistent with capital structure literature as a critical determinant of financial outcomes, especially performance and aligns in perspective with the current researcher's model.

A study by Bhanot *et al.* (2021) found that a longer-term debt maturity structure is associated with higher firm value, lower financial distress, and lower bankruptcy risk. Another study by Chakraborty and Yang (2021) found that firms with a more balanced maturity structure (i.e., a mix of short-term and long-term debt) tend to have higher profitability and lower default risk than firms with a more skewed maturity structure. However, not all studies have found a positive relationship between the term structure of debt and firm performance. For example, a study by Chen *et al.* (2019) found that firms with a longer-term debt maturity structure tend to have lower profitability, higher default risk, and lower firm value.

Another study by Cai *et al.* (2020) examined the impact of interest rate expectations on the term structure of debt. The study found that when firms expect interest rates to rise in the future, they are more likely to issue long-term debt to lock in lower borrowing costs. Conversely, when firms expect interest rates to fall, they are more likely to issue short-term debt to take advantage of lower borrowing costs in the future.

2.4.3 Impact of the effective tax rate on the debt-to-equity Ratio.

The investigation into the impacts of the effective tax rate on the debt-to-equity ratio was extended by Michalkova *et al.*'s (2021) study which explored the impacts of capital structure and tax shields on corporate management efficiency. Michalkova *et al.*'s investigation was spurred on the basic assumption that tax has a huge impact on determining the financial outlook of corporations and hence effective systems such as the use of tax shields aimed at reducing taxable income are deemed expedient in organisations of corporate nature for a chance for better finances; thus, to profit corporation may vary their approach to capital structure and make advance towards utilising the benefits of tax shields. In their study, the authors investigated factors which impact firms' earnings and the relationship between tax shields and capital structure. These may also have impacts on the management performance of such firms and be, therefore, included in their study objectives. The study utilised the analysis of capital structure models operating in the analysed countries to evaluate both taxable and non-taxable profit optimisation. In their approach, companies totalling from Slovak and Czech were selected from the non-financial sector from 2014 to 2017. In the method, the authors used total short-term and long-term as the variations of the leverage ratio in determining the structure of their operating capital. To measure effective tax rates, the authors utilised tax shields and profit manipulation, which were based on returns at discretionary levels, which were based on firmlevel factors, whereas gross domestic product (GDP) and inflation rates were accessed to track country-level factors. After analysis of data, the result indicated a negative dependence on profitability and leverage which aligns with the assumptions of the Pecking order theory for developing and emerging economies. The result further indicated that in Slovak and Czech, tax interest and non-tax benefits are mainly used by profitable companies although less emphasis is on the non-interest benefits. This is largely because the tax interest is usually swapped using manipulated non-tax profit data which may be actualised through profit management before the declaration. Equally, findings denote that firms or corporations with indebtedness profiles usually favour an increase in accounting profit to facilitate easy routes to obtaining affordable and cheaper long-term debt, although this accounting distortion comes with negative consequences in short-term debt management. In the short term, high accounting profit risks higher demands by debt holders and thus increases overall debt cost to the company.

Drawing from their study, it could be extracted that the practical use of profit manipulation may serve as an effective tax rate which can favour debt capital structure and enhance financial performance in the short term. The finding is, therefore, associated with the current study, which also investigates the impacts of the effective tax rate on the capital structure of corporations. Drawing from their findings, the current study finds support for the ETR-DER hypothesis which encourages effective management of tax to yield purposive firm outcomes. Consequently, the findings of Michalkova *et al.* (2021) are concurrent with the position proposed by the model of this study and thus offer empirical insights and advantages on the impacts of capital structure and tax shields on corporate management efficiency; although, the investigative structure of capital was not definitive. In this perspective, enjoying tax shields is notably a significant utilisation of ETR, which is associated with a negative relationship with DER, providing yet evidence that management of DER cost may be boosted with effective administration of ETR.

The study by Caroline *et al.* (2021) investigated the relationship between tax avoidance, earning management, return on assets, and debt-to-equity ratio in the consumer goods industry sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2015-2019. Their study utilised an illustrative research method to obtain secondary data from a sample of ten companies from a population of 50 listed on the IDX. The hypotheses were tested using a regression model with multiple regression analysis conducted in E-View Eleven software. The normality, multicollinearity, and auto-correlation tests were performed to ensure the classic assumption test was met. The T-test, F-test, and coefficient of determination tests were also conducted to ascertain the relationship among variables given the model equation of the study. The result of their analysis revealed that tax avoidance was not affected by debt-to-equity ratio, earning management, and return on assets. The findings of Carrolline *et al.* (2021) contradict the DE-ETR hypothesis proposed by the current study, which suggests that ETR could determine companies' choice of capital structure and financial management. However, the findings of Rosmawati and Ginting (2022) appear to negate Carrolline *et al.*'s findings, indicating that the results may be circumstantial on companies and the time of the study. Nonetheless, Carrolline *et al.*'s (2021) findings align with the current study's design and model and provide symbolic support for the DE-ETR hypothesis. The study suggests that managing earnings and maintaining an appropriate debt-to-equity ratio can help reduce debt and equity costs and improve implied financing profiling and corporate performance.

Similarly, Trianti (2021) explored the effect of capital structure, profitability, tax planning and dividend policy on the value of companies listed on the IDX. Their study aimed to establish whether the firm value is impacted by capital structure, profitability, tax planning, and dividend policy. In the method section, the authors focused on the IDX listing in 2020 to select a population of 57 consumer goods companies that were indexed in the listing using a purposive sampling technique. The result of the data analysed of the type of capital structure they practice, the profitability of the company, their tax management systems and the nature of dividend policies, the results were indicative that firm value was significantly impacted by the type of capital structure implemented by the company. The analysis reports that there was a significant increase in the firm's value due to the use of debt capital structure due to the associated rise in interest costs and the use of debts to reduce taxable finances and payments. In the case of the profitability of the firm, company value was also impacted significantly at < 0.05, evidence that firm value and their competitive advantage or leverage were positively influenced by profitability. However, tax planning did not show a significant effect on firm value at >0.586, implying that tax planning was rejected because the burden of tax as determined by the regulators and the government was not favourable. Another key indicator, which is dividend policy, was also significant on firm value as it signals financial health and certainty for the investing public; the statistical report indicated the probability of < 0.083.

In relation to the current study, Trianti's study further provided evidence that tax management is a crucial element in the financial management of firms such that effective tax rates significantly impact the firm's capital structure, especially as regards debt financing, and consequently enhance organisational chances of good financial performance and overall management performance. The study is therefore found to provide strong empirical support to the model of the current study as it explains the impacts of effective tax rates on debt management structure and a company's financial performance. It is quite plausible to find a supportive basis that underlines the purpose of the DE-ETR model from Trianti's (2021) result. As established in the result, tax planning could impact the dividend policy on the value of companies listed on the stock exchange since the study established that firm value was impacted by capital structure, profitability, tax planning, and dividend policy. In agreement with part of the findings in which Trianti (2021) emphasised that tax planning may be exploited and used for effective administration and management of capital structure and firm's profitability, there is congruency of purpose between Trianti (2021) evidence and the current model justifying the need for this examination in different organisational and statistical context and within the different sample population.

The impacts of the effective tax rate on debt and other organisational variables were explored by Abdiansyah (2018). The focus of Abdiansyah's study was to ascertain whether an effective tax rate has an impactful effect on corporate debt profile and liabilities by analysing how effective the tax rate is on the firms' liabilities. The study is predicated on efforts to boost effective tax rates through some corporate practices, such as avoidance without the burden of violating existing tax laws so that more profits will be made in the post-tax statement as revenue increases, indicating a reduced cost of the tax on profit. In the methods, the study utilised E-Views software (version 10) to analyse the statistical linear regression model. After analysis of data, the result did not indicate any significant effect on the effective tax rate on liabilities at a probability value of 0.80 at p < .05. However, a significant profitability effect was recorded in terms of return on assets (RoA) at 0.0007, p < .01. Concerning the current study on the impacts of the tax rate on DER, it is not certain why the outcome turned out insignificant on liabilities which also connote organisational debt profile in line with their capital structure of in terms of debt and equity financing. In this instance, Abdiansyah's (2018) study further highlights that there could be multifaceted factors which could, in reality, influence a firm's DER even when they have deployed an effective tax rate regime. It is left to conclude that other uncontrolled variables missing or given less attention would possibly be the cause of the insignificant statistical outcome.

In relation to the current study, the position of Abdiansyah's study, which ascertained that effective tax rate has an impactful effect on corporate debt profile and liabilities, was supportive of one of the hypothetical models proposed in the current study, especially regarding the similarity of the design and method. This makes the findings from the study consistent and important to management, especially regarding financing mix and organisational performance. This is because the effective tax rate, as found in their study, had a negative outcome on debt profile and liabilities in which ETR enhanced the management of debt and liabilities, implying that there could be a benefit in utilising the ETR strategy in the financing mix in order to reduce negative financing impacts on performance or outcomes. For instance, with good management of ETR, there are greater chances that organisational or firms' debt exposure and liabilities could be reduced such that the greater the ETR, the lower the firms' exposure to debt and liabilities and the more the organisational performance. This reduction in debt exposure and liabilities may be facilitated by reducing the agency costs associated with higher debts. In this circumstance, implementing an effective tax rate in part enhances organisational chances of greater reduction of costs associated with debts and consequent liabilities and the chances of good financial and organisational performance.

In another study, Devereux et al. (2018) investigated how capital structure may be impacted by corporate tax incentives from firm-level tax returns in the United Kingdom, which aligns with the objectives of the current study on the impacts of the effective tax rate on the debt-to-equity capital structure of corporate organisations. The authors focused on confidential company-level tax returns, utilised a general dynamic adjustment model of leverage, and tried to explore the variation of the company's marginal tax rates. In the method, Devereux et al.'s study focused on and utilised the differential in both high marginal tax rate and low incentive to borrow, under the assumption that they would be consistent with the organisation's choice of capital structure in line with the propositions of the Pecking order theory of capital structure. The result indicated that Devereux et al. found that when it comes to organisational leverage, the effectiveness of tax rate is implicated such that there is always a positive and substantial long-run tax effect on the holistic view. The authors evidenced that this situation results from the fact that corporate leveraging is very sensitive to changes in the marginal tax than when the compounded average tax rate. Due to this, tax returns determine marginal tax rates with greater explanatory power than financial statements do. Devereux et al.'s finding implies that tax effects on capital, which determine the extent of effective tax rate, could be underestimated using financial statements only, which is a result of errors in the measurement of tax incentives. Although Devereux et al. (2018) were not specific about the type of capital structure which correlated with tax incentives, there is an apart from their study which provided understanding and basis for this study.

In part, the finding provides one positive outcome of the tax incentive, which is meant to reduce the taxable part of organisational or firm's earnings as a beneficial outcome in corporate financing, especially regarding the management of debt and equity profiling and how this affects the financial performance of the firm and overall performance of the company. Hence, in relation to the current study, ETR may come as exploring the tax incentives and taking advantage of them to reduce the taxable part and thus increase organisational profit, which in the long run may be utilised to reduce the agency cost of debts to their barest minimum. These instances imply that the ETR may offer certain leverage which firms may take advantage of in financial profiling to strategically reduce the cost of productivity. This may be debated in terms of its legality across varying differences in the corporate world and prevailing business environment and sectors' demands in terms of applicability.

Also, Spengel et al. (2018) explored the possible impacts of debt-equity bias on effective tax rates and revenue neutrality. Their study was predicated on the premise that the use of debt rather than finance is influenced by the inherent corporate tax system in the sector which has impacts on the micro-financial stability of firms. Given available options to alleviate debt bias and neutralise tax effect, the study utilised the Devereux/Griffith model in the establishment of indicators of the effective tax burden of organisations and attempted to evaluate the critical fundamental tax reform choices on neutral financing involving corporate organisations of countries within the European Union. Data results indicated that in terms of financial neutrality, all available tax reform choices were impactful among the countries within the European Union. About the current study exploring the impacts of the effective tax rate on aspects of corporate financial structure (debts and equity), Spengel et al.'s (2018) emphasis on effective tax rates would further be understood as consequential on enhancing firm's financings in the light of Rahnama and Nahandi's (2019) findings which support the argument that effective tax rates have positive in-roads into corporate financial structure especially concerning use of debt and equity. Like the current study, Rahnama and Nahandi (2019) investigated whether effective tax rates have significant impacts on capital structure, investment decisions and dividend profit of corporate organisations. In the method session, Rahnama and Nahandi investigated all 94 acceptable corporations which are quoted in the Tehran Stock Exchange (TSE) beginning in 1988 and ending in 1993. In the case of data analysis, the authors adopted a multivariate

regression, which indicated that a negative impact was significant on the impact of the effective tax rate on the debt ratio, which serves as the firm's financial leverage. However, they found that in terms of long-term and investment decisions, the observed impacts were not significant.

In relation to this study, the observed impact is indicative of the expected influence of effective tax rate in corporate financing and, therefore, is supportive of the hypothetical model of the current study. Again, the findings of Spengel *et al.* (2018) offer utility for continued investigation on the DE-ETR beneficial impacts on corporate financing and organisational performance. The finding projects associated debt-equity bias on effective tax rates and revenue neutrality as a basic paradigm for taking advantage of favourable tax regimes for beneficial financial profiling which aligns with the DE-ETR hypothesis of the current model. It is noted that while examining the potential, the authors found that effective tax rates increase the chances of reducing DER bias and help the management ascertain the best practice and utility of either debt or equity financing. Such as the advantages enjoyed from utilising EFR regimes may be beneficial in reducing costs associated with debts or their choices. Most debt-related challenges deplete the organisational finance and expose the organisational outcomes, including the firm value, profitability, efficiency and effectiveness. Improving ETR, therefore, has direct consequences for these outcomes.

## 2.4.4 Impact of tax avoidance on firm performance.

Abubakar *et al.* (2021) extended the empirical evidence that corporate tax avoidance is connected with free cash flow and real earnings management, which are indices of corporate performance. In the method, the authors used a sample of 72 non-financial enterprises with 360 firm-year observations across a five-year period are used in the studies (2014-2018). Data were retrieved from Thompson Reuters and Bloomberg databases in addition to the annual reports of these companies. The model under investigation was tested using multiple regression

techniques. The findings demonstrate that management's activities to manipulate real earnings are increased by both corporate tax evasion and free cash flow. According to the authors' research, to help a wide range of users make economic decisions, financial statements are intended to convey comprehensive information on a firm's financial status, performance, and changes in financial circumstances. This implies that independent confirmation that the data reported by management about the company's financial performance and condition are factual and accurate is given by audited financial statements. This is because there is no guarantee that there will never be financial statement manipulation, not even with audited financial statements. Thus, in their argument, earnings management, which can be divided into actual and accural earnings manipulations, is the practice of modifying the reported earnings to accomplish pre-determined goals.

Following this argument, the study of the effects of corporate tax evasion and free cash flow on real earnings management in Nigeria helps to understand the relationship between tax management and real earnings management, which pre-determines the performance index. Abubakar *et al.*'s (2021) result submission typically accentuated the importance of tax management in corporate financing and performance. It, therefore, provided underlying paradigms supportive of the current model in the proposed study. Hence, it is fairly less contentious for the assumption of the current studies that in understanding tax regimes, regulators, politicians, and shareholders can understand the value of strong internal control systems in preventing the manipulation of reported financial statements and real profitability as concerns the relationship between D/E and tax management.

Many scholarly efforts support the tax-performance hypothesis; for example, Chukwudi *et al.* (2020) examined the effect of tax planning on the firm value of quoted consumer goods manufacturing firms in Nigeria. The objectives of their study were similar to those of the current study, whereupon the impacts of the ETR were investigated on firm value among the consumer goods manufacturing companies in Nigeria. In the method section, the study utilised a sample of 21 companies in which the inclusion criteria were the availability of financial statements among the population of the non-financial sector quoted on the floor of the Nigeria Stock Exchange (NSE) at the time of the current study. The period under investigation covered 2009-2018. To analyse the data obtained from the companies, the authors utilised descriptive statistics, Breusch-Godfrey, the Serial Correlation test, the multicollinearity test, the test for the fixed effect, the random effect, the Hausman specification test, and regression analysis. E-View 9.0 statistical software was utilised to analyse all statistical data. Also, the test of value relevance of corporate tax avoidance and the moderating effect of agency cost of the nexus variables formed the model specification of Chukwudi et al.'s study. At the end of their data analysis, the result indicated a negative impact of ETR on the firm's value. In contrast, the book-tax difference (BTD) had a positive impact on the firm's value, although this impact did not reach a significant proportion. The findings imply that firm value improved relative to the decrease in the tax (savings from tax), which denotes the effective tax rate in the companies under review. Also, the result showed that there is a possibility that improvement in the BTD may likely improve firm value given the observed positive impacts from the analysis. Comparing the study to the objectives of the study, it is similar in the sense that firm value appreciation is a reflection of performance enhancement and, in relation to tax, is an indication that there is an effective tax rate in the firms under review. Thus, Chukwudi et al. (2020) have provided both empirical support and gap to further investigate the impacts of various tax management systems as forms of ETR, such as tax avoidance and tax shield on the corporate value, which is also an important performance index in the measurement of organisational performance. Their study is, therefore, consistent with the model of the current study seeking to determine the impacts of ETR on organisational performance.

In relation to the current study, Chukwudi's study provided yet empiricism to the fact that good management of tax systems could potentially impact the organisation in the most significant ways. Aligning it with the current study, the current tax avoidance-performance model is aptly supported by the findings of Chukwudi, *et al.* (2020). The submission of their findings posits that tax planning has a significant effect on the firm value of quoted consumer goods manufacturing firms in Nigeria. The finding is reflective of the hypothetical models of this study in which the variations tax regime implementations have significantly varying consequences on organisational outcomes including the nature and dynamics of effective management of DER, financial profiling, and performance-related criteria.

Furthermore, Kayode and Folajinmi (2020) re-established the relationship between corporate tax planning and the financial performance of quoted food and beverages firms in Nigeria. Using a population of fifteen quoted food and beverage companies listed on the Nigerian Stock Exchange for ten years, between 2008 and 2018, this study evaluated the impact of corporate tax planning on the financial performance of quoted food and beverage firms in Nigeria. The sample was created using the total enumeration sampling method. An ex-post facto research design was used in the study. The required audit of the financial statements and the regulator's clearance for usage served as the foundation for the instruments' validity and dependability. Statistics that are both descriptive and persuasive were used to analyse the data. According to the analysis, the corporate tax planning factors of the effective tax rate, capital intensity, and thin capitalisation do not significantly improve the financial performance of a listed Nigerian food and beverage company. F-statistic (input) = 8.81; adjusted R 2 = 0.069; p = 0.03830.05. The industry's return on assets is significantly positively impacted by all proxies of corporate tax planning strategies (Adjusted R 2 = 0.1095: F-statistic 37.76, p=0.0000.05). Similar to the previous finding, the outcome demonstrates that no proxy for corporate tax preparation strategies significantly increases earnings per-share in the food and beverage sector 166

(Adjusted R 2 = 0.068: F-statistic 1.34, p= 0.2639>0.05). From the findings, it is evident that tax management can pre-determine the financial performance of firms. The study arrived at the following conclusion that corporate tax planning, measured by proxy for effective tax rate, capital intensity, and thin capitalisation, significantly improves the performance of listed food and beverage companies in Nigeria. I agree with the finding above because it is consistent with the literature and provides insight into how corporate tax policies could influence or impact financial performance. Also, the study further provided its relationship with critical aspects of corporate performance.

There is also empirical evidence from Olarewaju and Olayiwola (2019) who investigated corporate tax planning and financial performance in Nigerian non-financial quoted companies. Their study examined the connection between corporate tax strategy and the financial success of publicly traded non-financial enterprises. 47 chosen non-financial organisations were utilised to collect the secondary annual data from 2007 to 2016. Using structural analysis tools like variance decomposition and impulse response function, a panel vector autoregressive technique was used. At the conclusion of the analysis, the study's findings showed that tax avoidance had a negative correlation with financial performance whereas tax saving had a positive correlation. The financial factors under examination were primarily responsible for their shocks or inaccurate predictions. Financial performance reactions to shocks in tax savings had a contraction effect and as a result, may improve the performance of the companies while financial performance responses to shocks in tax evasion had an expansionary effect and might harm the performance of the companies. The success of nonfinancial enterprises is therefore significantly influenced by corporate tax planning that increases tax savings. Although, I disagree with tax manipulation of any kind in order to enhance corporate performance; however, firms should engage in tax planning and also ensure that their tax management system is lawful which can help in tax savings for the companies,

prevent the payment of excessive or multiple taxes, and generally improves financial performance.

Onyali and Okafor's (2018) findings were equally decisive empirical evidence supporting that tax management can determine a firm's financial performance and organisational performance. Onyali and Okafor determined the impact of corporate governance practices on tax avoidance across a sample of Nigerian manufacturing companies using an ex-post facto research design for the study's methodology. The study was carried out in Nigeria, and the information utilised for it came from the financial statements of manufacturing firms listed on the Nigerian Stock Exchange (NSE) and the NSE fact book as of the end of 2016. Based on the requirement that they provide complete data on the study variables, forty-four (44) listed manufacturing firms were chosen for the study, which spanned the years 2005 to 2016. The annual reports and financial statements of the companies, as well as the Nigerian Stock Exchange Fact Book, served as the sources for the study's data. The acquired data were examined using the Best Linear Unbiased Estimate (BLUE) Property of the Ordinary Least Squares method. Additionally, using STATA 13.0, a study was conducted to examine the combined effects of corporate governance measures on the tax aggressiveness of the chosen manufacturing enterprises. After analysis, the analysis of the data showed that board diversity, independent directors, and the ratio of non-executive to executive directors have a significant impact on tax aggressiveness among listed manufacturing firms in Nigeria. Board size has no significant effect on tax aggressiveness.

I agree with the findings of Onyali and Okafor (2018) because it is important for listed manufacturing companies in Nigeria to place more emphasis on the calibre and integrity of their board members than on the size of their board so that the firm can always present true earning and values which is an index of performance. The regulations of the SEC and CBN
code of corporate governance should guide organizations here so that they can more realistically forecast real earnings in relation to their tax management.

The same could be said about the findings made by Igbinovia and Ekwueme (2018) who examined corporate tax avoidance and shareholder returns: moderating effects of monitoring in Nigeria. Their study examined how monitoring affects the relationship between corporate tax evasion and shareholder returns in listed Nigerian companies. In the method session, annual financial information was gathered from 54 non-financial companies from a variety of sectors of the Nigerian Stock Exchange using an ex-post facto design (NSE). Within the confines of E-view 9.0, analyses employing the OLS regression were conducted. According to the study, corporate tax evasion has a beneficial impact on shareholder returns in listed non-financial enterprises in Nigeria, and the impact is enhanced by stronger monitoring mechanisms. They also found an improvement in the selected firms' liquidity, profitability, predicted growth, and tangibility when tax avoidance behaviour is closely observed. I agree with the current findings because they provided empirical evidence establishing the influence of corporate management and organisational performance, especially in establishing how the tax policies of firms can help them maintain organisational integrity and corporate financial health.

Consider also the finding from Olatunji and Oluwatoyin (2019) who explored the effects of corporate taxation on the profitability of firms in Nigeria. The authors used secondary data that was gathered from a number of publications of the firms' financial reports to investigate the impact of corporate taxation on the profitability of a few selected firms in Nigeria from 2007 to 2016. The estimating method used in the study was pooled ordinary least squares. According to the analytical findings, the value-added tax coefficient was 14.51298 and its p-value was 0.0000, while the corporate tax coefficient on profit after tax had a positive value of 2.418830. Additionally, the withholding tax coefficient had a positive value of 7.256489 and a p-value of 0.0000. Additionally, the results of the education tax show that the coefficient is

36.28245 and the p-value is 0.0000. The authors concluded that the corporation tax rate and the education tax, which are the two main taxes that businesses pay, had positive and significant effects on profit after tax. Additionally, it is established that using the value-added tax rate and the withholding tax as additional variables that can affect profit after tax also exhibited beneficial and significant effects on profit after tax. In order to prevent non-compliance, the report advised the government and key tax authorities to enhance corporate tax administration. In view of the found effects, I strongly agree with the findings which once more underscore the impacts of tax management and policies on organisational financial footing and performance. The findings are also consistent with literature emphasising the importance of effective tax rates on corporate performance.

More so, Tanko's (2020) findings which explored the moderating effect of profitability on the relationship between ownership structure and corporate tax avoidance in Nigeria's listed consumer goods firms upheld the conceptual model linking effective tax rate and corporate performance. In Tanko's study, tax avoidance was measured by the GAAP effective tax rate, whereas profitability was gauged by return on assets. The ownership structure was represented by management ownership, institutional ownership, and foreign ownership (RoA). From the sampled firm's annual report and accounts, secondary data was taken. The Generalised Least Square method was used to analyse the data (GLS). Tanko (2020) found a weak and unimportant link between institutional ownership and corporate tax evasion. Similarly, to this, tax evasion is promoted by RoA's moderating effect on foreign ownership. According to the report, tax authorities should conduct thorough tax audits and look into the operations of businesses to make sure that their tax avoidance stays within the bounds of the law. If this is done, it will be easier to determine whether businesses are actually paying the taxes they should be paying or not. The findings indicate that there is a relationship between tax allowances and relief provisions given to corporate entities because the majority of businesses reported losses in some years to benefit from loss relief while other businesses bought non-current to benefit from capital gains. I equally agree with Tanko's findings as they offered insights into how taxes by the government can hamper the financial performance of firms and how government proactive measures towards reassessing those taxes can help revamp such firms affected by those taxes to boost productivity and effectiveness.

The relationship between corporate tax management and corporate performance was once more highlighted by Adegbite and Bojuwon's (2019) investigation of corporate tax avoidance practices as empirical evidence from Nigerian firms. Adegbite and Bojuwon evaluated corporate tax avoidance among Nigerian publicly traded companies. From 2006 to 2017 secondary data were gathered from annual reports of particular Nigerian companies listed on the Nigerian Stock Exchange. The impact of the independent variable's thin capitalisation, leverage, firm size, transfer pricing, and intangible assets on the dependent variable was examined using the panel data analysis technique (Corporate Tax Avoidance). The outcome demonstrated a substantial relationship between corporate tax avoidance and thin capitalisation, firm size, profitability, leverage, intangible assets, and transfer pricing. The three main factors that contribute to company tax avoidance are thin capitalisation, profitability, and transfer pricing. I also agree with Adegbite and Bojuwon's findings because different sectors in Nigeria have different tax practices so also different companies; it is therefore imperative for organizations to take advantage of their peculiar tax practices to enhance their performance indices while remaining tax compliant. Taking advantage of tax practices which benefit a firm may help such firms avoid unnecessary taxes and drastically lower their tax obligations. This can engender greater financial performance and overall organisational performance.

Another support was found in Olamide *et al.*'s (2019) study which investigated the effects of corporate tax planning and the financial performance of systemically important banks in Nigeria. Their study came in the wake of the multiplicity and overburdening of Nigeria's tax

system on corporations. In the method, the study adopted an ex-post facto research design to analyse tax data from commercial banks focusing mainly on their corporate tax planning and their financial performance. The data from the study were analysed using pooled OLS. The result revealed that financial performance was impacted negatively by the effective tax rate but the financial performance of SIBs in Nigeria was positively impacted by capitalisation. Also, the impacts of capital intensity and lease options on organizational financial performance turned out to be insignificant. In relation to the current study on the impacts of the effective tax rate rate on organizational performance, both studies are similar but differ on the aspect of tax in question; whereas Olamide's (2019) study focused on the impacts of tax planning on corporate financial performance the current study was focusing on tax avoidance as it fills certain gaps left by previous studies which did not put tax avoidance in perspective.

In another study, Li *et al.* (2018) investigated the impact of managerial ownership and firm performance in consideration of the 2003 tax. In their study, they were interested in factors which impact managerial ownership; using Tobin's Q to measure operating performance, the difference-in-difference (DID) indicated a humped-shaped improvement in corporate financial performance. In relation to agency problems, the increased performance indicated greater pronouncement; although, organisations with severe agency problems or organisations in which governance is less effective or weaker actual corporate performance may equally increase.

In the same vein, Ifurueze *et al.* (2018) determined the effect of corporate tax aggressiveness on firm growth in Nigeria as an empirical analysis. Investigating the impact of corporate tax aggression techniques on business growth in Nigeria is the major goal of Ifurueze *et al.*'s (2018) study. Investigating the impact of leveraging tax aggressiveness strategy on firm growth in Nigeria and assessing the impact of effective tax rate aggressiveness strategy on firm growth in Nigeria were the two particular goals. In the method session, data were gathered

from yearly reports and accounts of Nigerian food-producing enterprises using an ex post facto research design while the formulated hypotheses were tested using pooled multiple regression analysis. Leverage (LEV) had a favourable effect on our dependent variable, firm growth, according to the study. However, statistics did not support this impact. ETR had a beneficial impact on our dependent variable, firm growth, according to the study, but this impact was statistically not significant. Since the impact of the effective tax rate is not statistically significant, it should not be taken into consideration when predicting the expansion of businesses in Nigeria. The authors advocated that it is important to promote growth based on the effective use of tax rates. Based on this insignificant effect, I totally disagree with Ifurueze *et al.*'s finding because how effectively corporate organisations manage their taxes impacts organisational financial health which can be linked to overall performance. Perhaps, there are corporate peculiarities among the firms investigated in their study which were not accounted for by the design of their study as findings did not align with theoretical and empirical evidence in the literature supporting that tax management systems impact corporate finance and organizational performance.

Buttressing the impacts of the tax system, Shams *et al.* (2022) carried out a study to ascertain whether corporate tax avoidance promotes managerial empire-building. In this study, the authors tried to determine the association between corporate tax and the financial outlook of the firm. In the method section, the authors analysed a composite of 35,060 firm-year observations from 1991-2015. To measure the statistical output, a composite was built by the researchers in accordance with the realities in the literature. After analysis of data, and using their composite measure for the identified proxies, the authors reported a positive association between the factors and tax avoidance of the sample. This may be a result of agency problems which may be inflicted upon the firms employing tax avoidance; although in the long run, they facilitate managerial rent extraction which may be in the form of aggressiveness in growth

which may also be involved in the accumulation of assets. The authors also found that it is greater in weakness in governance, and poor monitoring mechanisms. The authors also found that empire-building-motivated task avoidance usually leads to lower firms' valuations.

## 2.5 Summary of some empirical studies done.

## Table 1: Summary of some empirical studies

2.5.1 Capital Structure and Fir	2.5.1 Capital Structure and Firm Performance Studies										
Author(s)	Yea r	Country	Sample	Study perio d	Methods (Data)	Key findings					
Ngatno, Apriatni and Youlianto	2021	Indonesia	506 MFIs	2019	Moderated regression analysis	Long-term debt to total assets had a negative non- significant relationship with RoA and ROE, while total debt to total assets and short-term debt to total assets had a positive relationship with RoA and ROE. The results of the multiple regression analysis are also consistent with the correlation results. Their findings support Trade-off Theory (ToT)					
Das, Chowdhury, and Islam	2021	Banglades h	165 firms	2007- 2016	Differenced and System GMM	The GMM results showed a negative relationship between financial leverage and firm performance proxied as ROE and RoA. Their work aligns with Agency Cost Theory (AcT).					
Mardones and Cuneo	2020	Brazil; Chile; Mexico; Peru		2000-2015	Instrumental variables GMM	The use of a surrogate for short-term debt to total assets had a positive impact on return on assets (RoA) and ROE, but it reversed to a negative impact on Tobin's Q. On the other hand, the proxy for long-term debt to total assets had a negative impact on RoA, ROE, and Tobin's Q. However, when conducting a comprehensive analysis, mixed findings were observed.Their mixed findings across different debt measures and					

						performance metrics reflect the Pecking Order Theory (PoT).
Nwala, Gimba, and Oyedokun	2020	Nigeria	Ex-post facto; 25 insurance firms	2011- 2017	Multiple regression (Annual reports)	The results showed that debt assets are positively related to RoA, while equity assets are negatively related to RoA. However, none was significant in the Q model. In the RoA model, the signs reversed, with debt assets being negative while equity assets were positive. Their findings showing opposite effects between debt and equity assets on RoA aligns with Market Timing Theory (MTT).
Abdullah and Tursoy	2019	Germany	2,448 firm years	1993- 2016	Two-step first- differenced GMM	A positive relationship between debt and performance aligns with Modigliani and Miller's (1963) trade-off theory, which suggests that firms can benefit from the tax shield advantages of debt financing up to an optimal point. Their use of GMM methodology helps address the endogeneity concerns raised by Jensen (1986) regarding the relationship between capital structure and
Kenn-Ndubuisi, Ifechi, and Nweke	2019	Nigeria	80 non- financial firms	2000- 2015	Pooled OLS; FEM; REM	The results showed a significant negative effect of the debt-to-equity ratio on EPS in all four models, as in the ROE model. However, total debt to total assets was negative in the pooled and marginal regression models but negative in all four models for ROE. The long-term debt-to-capital ratio had a negative effect on ROE in all four models but was negative in the pooled regression for EPS only. Their findings here support the pecking order theory

Samo and Murad	2019	Pakistan	40 firms		2006-	Pooled regression	The results showed a negative relationship between
	2017	i unistuii			2000-		leverage and profitability (PoA and POE). It aligns
					2010	(Annual reports)	with Lenger and Machling's (1076) access and the
							with Jensen and Meckling's (1976) agency cost theory,
							suggesting that increased debt can lead to agency
							conflicts between shareholders and debtholders,
							ultimately reducing profitability.
Uremadu and Onuegbu	2019	Nigeria	4 firms		2002-	Ordinary least squares	The results showed that the long-term term debt to total
					2016		assets and debt-to-equity ratio had a negative non-
							significant effect on RoA. It partially supports Baker
							and Wurgler's (2002) market timing theory, suggesting
							that firms' capital structures are cumulative outcomes
							of past market timing attempts rather than moving
							toward an optimal leverage ratio.
Voand Ellis	2017	Vietnam	1214	firm	2007-	FEM	The results showed a negative relationship between
			years		2013		leverage and abnormal returns. It validates Ross's
			-				(1977) signaling theory perspective that high leverage
							can send negative signals to the market about firm
							prospects.
Eniola,Adewunmi, and	2017	Nigeria	5 banks		2004-	Descriptive statistics;	There is a positive correlation between debt finance and
Akinselure					2015	Pearson correlation	bank performance. It supports the static trade-off theory
						coefficient	framework developed by Kraus and Litzenberger
							(1973), suggesting that firms balance tax benefits of
							debt against bankruptcy costs.
Abdul and Badmus	2017	Nigeria	3 firms		2000-	Ordinary least squares	There was a negative insignificant effect of debt ratio
					2009		on financial performance. It aligns with Donaldson's
							(1961) original pecking order observations about firms'

						preferences for internal financing over debt when possible.
John-Akamelu, Iyidiobi, and Ezejiofor	2017	Nigeria	6 firms	2009- 2014	t-test	They found a non-significant effect on EPS; and a significant effect on RoA and ROE. It aligns with Myers' (1984) pecking order theory, suggesting that the impact of capital structure varies based on how performance is measured.
M'ng, Rahman, and Sannacy	2017	Malaysia, Singapore and Thailand	475[Malaysia] 262[Singapore ] 280[Thailand]	2004- 2013	OLS; Granger Causality (Thomson Reuter DataStream)	The fixed effect regression result showed that profitability had a negative effect while firm size had a positive effect on leverage in Malaysia and Singapore. Profitability had a negative effect while firm size had a positive effect on leverage in Thailand, with the former becoming non-significant. It provides strong empirical validation of Jensen and Meckling's (1976) agency theory. The negative relationship between profitability and leverage, combined with the positive firm size effect, supports Jensen's (1986) free cash flow hypothesis about how agency costs influence capital structure decisions.
Jaisinghani and Kanjilal	2017	India	1,194 firms	2005-2014	Panel threshold regression (Secondary data: Prowess database)	The results showed a nonlinear relationship between capital structure and RoA. In the small firm sample, the coefficient of capital structure was negative and @ 1 per cent; while for large firms, the coefficient of capital structure was positive and significant @ 10 per cent. validating Kraus and Litzenberger's (1973) trade-off theory. Their finding that size moderates the capital

							structure-performance relationship supports the theoretical premise that firms balance the tax benefits of debt against bankruptcy costs differently based on
							their characteristics.
Detthamrong, Chancharat,	2017	Thailand	493 firms	2001-	Multiple reg	gression;	Leverage had a positive effect on firm performance.
and Vithessonthi				2014	SEM		However, splitting the sample (i.e., into large and small
					(Secondary)		firms) showed a negative effect of audit committee size
							on firm performance in large firms and the effect of
							audit reputation on firm performance in small firms.
							Their findings regarding leverage's positive effect align
							with Modigliani and Miller's (1963) proposition about
							the tax benefits of debt. However, their results on firm
							size differences support Myers and Majluf's (1984)
							information asymmetry arguments.
Le and Phan	2017	Vietnam	Non-financial	2007-	Panel least	squares	The results showed a significant negative relationship
			firms	2012	regression		between capital structure and firm performance
							(proxied using RoA, ROE and Tobin's Q). It supports
							Donaldson's (1961) original pecking order observations
							about firms preferring internal financing.
Adenugba, Ige, and	2016	Nigeria	5 firms	2007-	OLS		The results showed that leverage had a significant effect
Kesinro				2012			on firm value. Their finding that leverage significantly
							affects firm value aligns with Modigliani and Miller's
							(1963) trade-off theory. As Modigliani and Miller
							theorised, when we introduce market imperfections like
							taxes, leverage can impact firm value through the tax
							shield effect. Their study provides empirical support for
							this seminal theoretical framework.

Bandyopadhyay and Barua	2016	India	1,594 firms	1998-	Two-step	dynamic	The results showing capital structure's significant effect
				2011	panel GMM	-	on performance can be understood through Myers and
					-		Majluf's (1984) pecking order theory. Their use of
							dynamic panel GMM helps control for the information
							asymmetry that Myers and Majluf identified as crucial
							in determining capital structure choices and their
							performance implications.
Kodongo, Mokoaleli-	2015	Kenya	29 firms	2002-	REM	(Nairobi	The results showed that debt-to-equity, debt-to-assets,
Mokoteli, and Maina				2011	Securities Ex	change)	and long-term debt-to-equity had a negative effect on
							ROE; with the last two being significant. Firm size and
							sales growth had negative significant coefficients. The
							results are also consistent in the RoA model. However,
							in contrast, the debt-to-assets ratio had a positive
							relationship with Tobin's Q; and a negative effect was
							found for debt-to-equity and long-term debt-to-equity.
							The control variables of firm size and sales growth had
							a negative relationship ie Tobin's Q model but not
							significant. Their documented negative relationship
							between leverage and ROE appears to contradict
							Modigliani and Miller's (1963) trade-off theory
							predictions about tax shield benefits. However, their
							results align more closely with Jensen and Meckling's
							(1976) agency theory, suggesting that high leverage
							may create agency costs that outweigh tax benefits.
							Their finding of a positive relationship between the
							debt-to-assets ratio and Tobin's Q, while debt-to-equity
							shows a negative relationship, highlights the nuanced

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						nature of capital structure's impact on firm value that
						Ross's (1977) signalling theory helps explain.
Gabriel and Nneji	2015	Nigeria	20 firms	2012-	Panel least squares	Leverage negatively affected corporate performance. It
				2013	regression	aligns with Donaldson's (1961) Pecking Order Theory.
					(Annual reports)	As Donaldson theorised, firms prefer internal financing
						over debt, suggesting that higher leverage may indeed
						harm performance as these studies found.
Vătavu	2015	Romania	196 firms	2003-	Cross-sectional	The results showed that tax (effective tax rate) had a
				2010	regressions	positive effect on RoA and ROE; while the ratio of total
					(Bucharest Stock	equity to total assets had a significant negative effect on
					Exchange website)	RoA and ROE. Short-term liabilities to total assets had
						a negative significant effect on RoA and ROE; while
						long-term liabilities to total assets had a positive non-
						significant effect. It connects with the trade-off theory
						amendment, which proposed that tax benefits of debt
						could enhance firm value. However, the negative
						impact of equity seems to contradict this, suggesting
						other factors at play.
Chen, Hu, Wang, and	2014	China	4,104 firms	2001-	Multiple regression	Tax avoidance is negatively related to the firm value
Tang				2009	(Annual reports)	measured by Tobin Q. Their findings that tax avoidance
						reduces firm value support the agency theory that tax
						avoidance may create agency costs that ultimately harm
						firm value. This theoretical connection helps explain
						the empirical result.
Lawal et al.	2014	Nigeria	10 firms	2003-	Multiple regression	The proxies of capital structure, i.e., total debt-to-asset
				2012	(Annual reports)	and debt-to-equity ratio had a negative relationship
						with firm performance (RoA and ROE). It provides
						strong empirical support for Myers' (1984) argument

Enekwe, Agu, and Eziedo	2014	Nigeria	3 pharmaceutical firms	2001- 2012	Multiple regression (Annual reports)	<ul> <li>that the costs of financial distress can outweigh the tax benefits of debt, a key element of Static Trade-off Theory.</li> <li>The debt ratio and debt-to-equity ratio negatively affect RoA; while the interest coverage ratio positively affects RoA. It also aligns with the pecking order theory.</li> </ul>
Chechet and Olayiwola	2014	Nigeria	70 firms	2000- 2009	FEM; REM	The result showed a negative relationship between debt ratio and profitability. This aligns with the Pecking Order Theory. As theorised, firms prefer internal financing over debt, suggesting that higher leverage may indeed harm performance as these studies found.
Babalola	2014	Nigeria	31 firms	1999- 2012	Multiple regression (Annual reports)	The results showed evidence of a trade-off between costs and benefits of debt in firms' capital structure decisions, and no evidence to support that large firms had better performance than mid-sized firms under the same debt ratio. This is evidenced in the trade-offs in capital structure decisions without firm size effects particularly validates Kraus and Litzenberger's (1973) classic formulation of Trade-off Theory, which focused on the fundamental balance between tax benefits and bankruptcy costs rather than firm characteristics.
Dawar	2014	India	N/A	2003- 2012	Multiple regression (Annual reports)	The results showed a negative relationship between leverage and firm performance. Dawar's work supports Myers' (1984) argument that the costs of financial distress can outweigh the tax benefits of debt, a key element of Static Trade-off Theory.

Al-Taani	2013	Jordan	45 firms	2005-	Multiple regre	ession	The result showed a negative non-significant
				2009	(Annual reports)		relationship between short-term debt to total assets and
							long-term debt to total assets with RoA and operating
							profit margin. The ratio of total debt-to-equity was
							positively related to RoA but negatively related to profit
							margin. Al-Taani's (2013) findings present an
							interesting theoretical paradox. The negative
							relationship between debt ratios and RoA aligns with
							Myers and Majluf's (1984) Pecking Order Theory,
							which suggests firms prefer internal financing over debt
							due to information asymmetry costs. However, the
							positive relationship between total debt-to-equity and
							RoA partially supports Modigliani and Miller's (1963)
							trade-off theory regarding the tax benefits of debt. As
							they theorised: "The tax advantages of debt financing
							are somewhat greater than we originally suggested".
Sheikh and Wang	2013	Pakistan	Non-financial	2004-	Panel data regress	ion	The results showed that total debt and long and short-
			firms (KSE)	2009			term debt ratios had a negative relationship with RoA.
							The short-term debt ratio had a positive non-significant
							relationship with the market-to-book ratio, while total
							debt and long-term debt ratios were negatively related
							to the market-to-book ratio in the pooled OLS model.
							Sheikh and Wang's (2013) results strongly support
							Myers' (1977) debt overhang theory. As Myers
							theorised: "The firm financed with risky debt will, in
							some states of nature, pass up valuable investment
							opportunities - opportunities which could make a
							positive net contribution to the market value of the

						firm." This explains their finding of negative relationships between debt ratios and both RoA and market-to-book ratios.
Akinyomi	2013	Nigeria	3 firms	2007- 2011	Correlation; Multiple regression	There is a positive correlation between debt-to-equity with RoA and ROE, but long-term debt-to-capital was negative and significantly related to RoA and ROE. Akinyomi's (2013) mixed findings - positive for debt- equity but negative for the long-term debt - reflect what Jensen and Meckling (1976) theorised about agency costs. As they noted: "The existence of agency costs provides strong reasons for arguing that the probability distribution of future cash flows is not independent of the capital structure." This theoretical framework helps explain why different forms of debt might have opposing effects on performance.
Ogebe, Ogebe, and Alewi	2013	Nigeria	6 firms	2000-2010	Panel data regression	The fixed effect regression model showed a negative effect of leverage on firm performance (proxied by return on investment). Ogebe, Ogebe and Alewi's (2013) finding of negative leverage effects aligns with Stiglitz's (1969) critique of the original M&M propositions. As Stiglitz argued: "The introduction of bankruptcy costs and the analysis of the effects of uncertainty on the behaviour of firms and lenders provides a framework within which many of the traditional arguments about firm and industry behaviour may be analysed rigorously." Their empirical

						evidence supports this theoretical position that bankruptcy costs can outweigh tax benefits.
Olokoyo	2013	Nigeria	101 firms	2003- 2007	Panel regression (Annual reports)	There is a significant negative effect of leverage on the RoA; however, leverage had a positive significant relationship with Tobin's Q. It aligns with the Pecking Order Theory developed by Myers and Majluf (1984). Their discovery of a negative relationship between leverage and performance supports Myers' contention that firms prefer internal financing over debt. As Myers theorised, higher leverage can signal information asymmetry issues and lead to poorer performance.
Khalaf	2013	Jordan	45 firms	2005- 2009	Multiple regression (Annual reports)	The results showed that total debt-to-equity was positively related to RoA and negatively to profit margin. Short-term debt to total assets was significant using RoA; while long-term debt to total assets was significant using profit margin. reflect the Trade-off Theory originally proposed by Kraus and Litzenberger (1973). The positive relationship between total debt-to- equity and ROA suggests firms benefiting from the tax shield effects that Kraus and Litzenberger described, while the negative relationship with profit margin indicates the counterbalancing costs of financial distress they theorised.
Shubita and Alsawalhah	2012	Jordan	39 firms	2004- 2009	Multiple regression (Secondary data)	The results showed a negative relationship between capital structure (short- and long-term debt) and profitability (proxied as ROE). The findings strongly

							support Jensen and Meckling's (1976) Agency Theory. The negative relationship between capital structure and ROE suggests the agency costs Jensen and Meckling identified - where high leverage can create conflicts between shareholders and debtholders, ultimately reducing profitability.
Salim and Yadav	2012	Malaysia	237 firms	1995- 2011	Multiple 1 (DataStream o	regression database)	The results showed a negative relationship for RoA, ROE and EPS with short-term debt, long-term debt, and total debt. The results also showed a significant positive relationship between Tobin's Q with short-term and long-term debt. However, total debt was negative with Tobin's Q. The fascinating results from Salim and Yadav (2012) provide evidence for both the Trade-off Theory and Market Timing Theory. The positive relationship between leverage and Tobin's Q aligns with Baker and Wurgler's (2002) Market Timing Theory that firms can create value by timing their financing decisions. However, the negative relationship with accounting measures supports the trade-off perspective that too much leverage erodes profitability.
Luper and Isaac	2012	Nigeria	15 firms	2005-2009	Multiple 1 (Annual repor	regression rts)	The results showed a negative non-significant effect of short-term debt to total assets and long-term debt to total assets on RoA and profit margin; while debt-to- equity was positively associated with RoA and negatively related to profit margin. It aligns with Myers and Majluf's (1984) Pecking Order Theory. As Myers and Majluf theorised, firms prefer internal financing

						over debt due to information asymmetries and costs associated with external financing. The negative performance impacts observed provide empirical support for their theoretical framework.
Adeyemi and Oboe	2011	Nigeria	90 firms; 150 respondents	N/A	Descriptive statistics; Chi-square	The results showed a positive significant relationship between capital structure and a firm's market value. It aligns with Myers and Majluf's (1984) Pecking Order Theory. As Myers and Majluf theorised, firms prefer internal financing over debt due to information asymmetries and costs associated with external financing. The negative performance impacts observed provide empirical support for their theoretical framework.
Puwanenthiren	2011	Sri Lanka	Large firms	2005- 2009	Multiple regression (Secondary data)	There is a negative relationship between capital structure and financial performance. It aligns with Myers and Majluf's (1984) Pecking Order Theory. As Myers and Majluf theorised, firms prefer internal financing over debt due to information asymmetries and costs associated with external financing. The negative performance impacts observed provide empirical support for their theoretical framework.
Simon-Okeand Afolabi	2011	Nigeria	5 firms	1999- 2007	Panel data regression (Annual reports)	The results revealed a negative relationship between debt financing and firms' performance. It aligns with Myers and Majluf's (1984) Pecking Order Theory. As Myers and Majluf theorised, firms prefer internal financing over debt due to information asymmetries

						and costs associated with external financing. The negative performance impacts observed provide empirical support for their theoretical framework.
Ong and Teh	2011	Malaysia	Construction firms	2005- 2008	Multiple regression (Secondary data)	The results showed a positive relationship between capital structure and firm performance. It better aligns with Modigliani and Miller's (1963) Trade-off Theory. This theory suggests that firms can benefit from the tax shield advantages of debt up to an optimal point, supporting the positive association between leverage and market value/performance these studies found.
Saeedi and Mahmoodi	2011	Iran	320 firms	2002- 2009	Multiple regression (Secondary data)	The results showed a negative relationship between capital structure and RoA, while EPS and Tobin's were positively correlated with capital structure. The model for ROE was non-significant. The mixed findings in Saeedi and Mahmoodi (2011) - negative for RoA but positive for EPS and Tobin's Q - reflect Jensen and Meckling's (1976) Agency Theory perspectives. Their theory proposed that debt can have both positive disciplining effects and negative agency costs, which could explain these differential impacts across performance measures.
Chen and Chen	2011	Taiwan	305 firms	2009	Hierarchical regression analysis	ROE had a negative effect on capital structure, while sales growth had a positive effect. The variable of assets structure, tax and dividend payment ratio had positive non-significant effects. The interaction of size showed a negative effect of ROE on capital structure and a

						positive effect of sales growth on capital structure. However, both were non-significant. The moderating effect of size on asset structure and dividend payment ratio were both negative and non-significant. The moderating effect of size on the tax and capital structure nexus was positive and significant. align with Myers and Majluf's (1984) Pecking Order Theory. The negative relationship between ROE and capital structure supports Myers' argument that more profitable firms will borrow less, preferring internal financing. However, the positive moderating effect of size on the tax-capital structure relationship echoes Modigliani and Miller's (1963) Trade-off Theory regarding the value of tax shields.
Abdul	2010	Pakistan	36 firms	2003- 2009	Pooled OLS	The short-term debt to total assets and total debt to total assets had a significant negative relationship with performance measured by RoA, GPM and Tobin's Q. However, the relationship was negative and non- significant when firm performance was measured ROE. It shows negative relationships between debt ratios and performance metrics particularly validates Jensen's (1986) Free Cash Flow Theory. As Jensen theorised, excessive debt can lead to financial distress costs that outweigh any disciplinary benefits, especially in developing economies with less developed financial markets.

Ebaid	2009	Egypt	64 firms	1997- 2005	Multiple regression (Annual reports)	The results showed a weak non-significant effect of capital structure on financial performance (ROE, RoA, Gross Profit Margin). The findings from Egypt, showing weak non-significant effects, interestingly challenge both the Trade-off and Pecking Order theories. This may reflect what Baker and Wurgler (2002) later termed Market Timing Theory - suggesting capital structure is more the cumulative outcome of past market timing attempts than a drive toward optimal		
Zeitunand Tian	2007	Jordan	167 firms	1989- 2003	Multiple regression (Annual reports)	Interest a significant negative relationship between capital structure and corporate performance. This Jordanian evidence of a significant negative relationship between capital structure and performance aligns with Myers' (1977) debt overhang theory. As Myers predicted, high leverage can discourage profitable investments due to the priority of debt claims, leading to reduced firm performance.		
2.5.2 Capital Structure and Tax Avoidance Studies								
Shaik et al.	2022	India	27 firms	2010- 2019	Dynamic panel data regression	The result showed that capital structure is negatively affected by profitability but positively associated with growth. However, the effect of the non-debt tax shield was not significant. Their findings that "capital		

						structure is negatively affected by profitability but positively associated with growth" strongly support Myers and Majluf's (1984) Pecking Order Theory. As Myers theorized, profitable firms tend to prefer internal financing over debt, leading to lower leverage ratios. This negative relationship between profitability and leverage is a cornerstone prediction of the Pecking Order Theory.
Dang and Tran	2021	Vietnam	369 firms	2008- 2020	FEM; REM (Thomson Reuters)	Leverage had a significant negative effect, while Z- Score had a significant positive effect on ETR. The variable of firm size also had a positive significant effect in FEM and REM, respectively. Their results showed that "leverage had a significant negative effect on ETR" aligns with DeAngelo and Masulis's (1980) extension of the Trade-off Theory, which posits that firms balance tax benefits of debt against financial distress costs. Their finding about firm size having a positive effect supports Titman and Wessels' (1988) argument that larger firms can better sustain higher debt levels due to diversification.
Jaffar, Derashid, and Taha	2021	Malaysia	21 firms (Access, Certainty, Efficiency (ACE) Market)	2014- 2018	Multiple regression (DataStream; Annual reports)	The results showed a negative non-significant effect of financial leverage on ETR. Their findings of negative relationships between leverage and ETR support Graham's (2000) tax shield hypothesis, though the non-significance suggests other factors may be at play, as

								predicted by Miller's (1977) work on personal taxes and corporate leverage decisions.
Legowo, Florentina, and Firmansyah	2021	Indonesia	95 obser	firm-year vations	2014- 2018	Multiple (https://ww ; Annual re	regression w.idx.co.id/ ports)	The results showed a non-significant negative effect of leverage on ETR. As for theoretical leakage, it is the same as above
Delgado, Fernández- Rodríguez, and Martínez- Arias	2018	Spain	4,356 year obser	firm- vations	1992- 2009	OLS; regression database)	Quantile (Compustat	The OLS showed a positive (significant) effect of leverage on ETR. The quantile regression results showed that at 25% leverage had a significant effect @1%; but, at 75% leverage was positive but significant @1%. The quantile regression results showing varying effects of leverage at different levels align with Fischer, Heinkel, and Zechner's (1989) dynamic trade-off theory, which suggests firms maintain leverage ratios within ranges rather than at specific points.
Singh	2016	Oman	61 fir	ms	2011-2015	FEM; RE Securities Annual rep	M (Muscat Market; orts)	Tangibility, profitability and liquidity have a negative relationship with leverage, while firm size and growth are positively related to leverage. The effect of non- debt tax shields is not significant. Singh's (2016) findings about firm size and growth having positive relationships with leverage, while profitability shows a negative relationship, presents an interesting theoretical tension between the Trade-off Theory (Harris and Raviv, 1991) and Pecking Order Theory (Myers, 1984). The positive growth-leverage relationship supports the Trade-off Theory, while the negative profitability-

						leverage relationship aligns with Pecking Order predictions.				
2.5.3 Tax Avoidance and Firm Performance Studies										
Budiman and Fitriana	2021	Indonesia	47 firms	2016- 2019	Multiple regression (https://www.idx.co .id/; Annual reports)	The tax avoidance proxy had a positive significant effect on firm values, while the interaction of tax avoidance and corporate governance had a negative non-significant effect on firm value. It aligns with Desai and Dharmapala's (2006) agency theory of tax avoidance, which suggests that tax avoidance can increase shareholder wealth. However, their finding that corporate governance negatively moderates this relationship supports Desai and Dharmapala's (2009) complementarity hypothesis about the interaction between governance and tax avoidance.				
Pratama and Suryarini	2020	Indonesia	24 firms	2014- 2018	FEM; Moderated regression analysis (https://www.idx.co .id/; Annual reports)	The results showed that profitability had a positive significant effect on ETR, while inventory intensity had a negative significant effect. The moderating effect was consistent with the prior results and also supported Zimmerman's (1983) political cost hypothesis. Their findings regarding inventory intensity align with Gupta and Newberry's (1997) work on the determinants of effective tax rates.				
Khuong, Liem, Thu, and Khanh	2020	Vietnam	125 firms	2010- 2016	SystemGMM(ThomsonReutersEIKON)	The current ETR negatively affected RoA and ROE, while the effect on Tobin's Q was positive. Leverage and growth had a positive effect on RoA and ROE, while the effect on Tobin's Q was negative for both variables. Size negatively affected RoA but had a positive effect on ROE and Tobin's				

						Q. The cash ETR had a positive effect on RoA and ROE but a negative effect on Tobin's Q. The control variables showed mixed findings except for size. BTD negatively affected RoA and ROE while the effect on Tobin's Q was positive. complex findings regarding ETR's varying effects on different performance measures reflect the theoretical tension identified by Hanlon and Heitzman (2010) in their comprehensive review of tax avoidance literature. Their results showing differential impacts on accounting measures (ROA/ROE) versus market measures (Tobin's Q) support the dual reporting system theory proposed by Scholes et al. (2014).
Delgado, Fernández- Rodríguez, and Martínez- Arias	2018	Spain	4,356 firms	1992- 2009	OLS; Quantile regression (Compustat database)	The OLS showed a negative (significant) effect of RoA on ETR. Firm size had a positive effect; while capital intensity and inventory intensity were both negative. However, using quantile regression size, inventory intensity and RoA were positive and significant @25%; while capital intensity was negative. At 75% level, size, inventory intensity and RoA were negative and significant; while the capital intensity was positive. The quantile regression findings align with Siegfried's (1972) political power theory, particularly regarding firm size effects. Their results on capital intensity support Stickney and McGee's (1982) seminal work on effective tax rate determinants.
Chen, Hu, Wang, and Tang	2014	China	Large firms	2001- 2009	FEM	The results showed that tax avoidance practices reduce firm value. The finding that tax avoidance reduces firm

						value provides empirical support for agency theory as articulated by Jensen and Meckling (1976), suggesting that tax avoidance can create agency costs that outweigh its benefits
Poli	2019	Italy	Private companies (41,672 firm years)	2015-2017	Multiple regression (Bureau van Dijk)	<ul> <li>Firm size and RoA had a negative significant effect on ETR, while leverage had a positive significant effect. Tangible fixed assets and inventories had a negative coefficient with the latter significant. The investments in subsidiaries were also negative and significant while intangible fixed assets were positive and significant. Poli's (2019) comprehensive findings on firm characteristics and ETR align with multiple theoretical frameworks:</li> <li>The negative size-ETR relationship supports Zimmerman's (1983) political cost hypothesis</li> <li>The positive leverage-ETR relationship aligns with DeAngelo and Masulis's (1980) tax shield substitution hypothesis</li> <li>The asset structure findings support Gupta and Newberry's (1997) theoretical work on tax determinants</li> </ul>

Source: Author's Compilation from reviewed literature (2021) Note: FEM (Fixed Effects Regression Model); REM (Random Effects Regression Model); GMM (Generalised Method of Moments); OLS.

## 2.6 Conceptual Framework.

The conceptual framework 'is a plausibly established and associated set of concepts and premises established from one or more theories' (Varpio, Paradis, Uijtdehaage, & Young, 2020) developed by the researcher to enable the in-depth understanding of possible interrelationships.

The conceptual model shown below identifies the different components of capital structure utilised in the study, i.e., debt-to-equity ratio, long-term debt-to-equity ratios and short-term debt-to-equity. The detailed description and measurement of these variables are discussed in the next chapter. The three components of capital structure point to different firm performance measures, RoA, EBITDA and Tobin's Q which are the dependent variable(s) utilised in the study. The detailed description and measurement of these variables are discussed in the next chapter. Prior studies have utilised these variables. For instance, Jaisinghani and Kanjilal (2017) support the use of EBITDA as it is less prone to earning manipulations by managers and independent of profit-sharing among shareholders, debt holders and governments.

The model also shows selected firm-specific variables identified from prior literature which affect the association between capital structure, corporate tax avoidance and firm performance nexus (Vătavu, 2015; Jaisinghani&Kanjilal, 2017). The study employs firm size, age, sales growth, board size and market-to-book (some of these variables were further explained in the next chapter) (Dang & Tran, 2021; Huang & Song, 2006; Jaisinghani&Kanjilal, 2017; Ogebe, Ogebe, &Alewi, 2013; Vătavu, 2015) to control for company-specific factors which affect the capital structure and firm performance nexus. The variable ETR was included as the moderator variable in the regression equations to control the tax outcome on the capital structure and firm performance nexus (Vătavu, 2015). The ETR is preferred over BTD as prior research works have revealed that BTDs may be hampered by

earnings management (Desai & Dharmapala, 2006), and other exogenous factors (Graham, Raedy, & Shackelford, 2012), which makes the BTD proxy prone to noise in empirical measurement (Wang *et al.*, 2020).

Firm size has been widely utilised in corporate governance and tax-related studies as a determinant of a firm's performance (Legowo, Florentina, &Firmansyah, 2021; Delgado, Fernández-Rodríguez, & Martínez-Arias, 2018). Large firms from a political cost perspective, are subject to greater media attention and scrutiny with stronger public pressure. They also have greater financial incentives for tax avoidance (Lisowsky, 2010; Wilson, 2009) but are not likely to take part in aggressive tax planning from greater public scrutiny (Watts & Zimmerman, 1986). The study by Um (2001) suggests that monitoring costs are smaller for big firms than for small firms. Thus, large companies will be more persuaded to do debt financing than small firms.

So, the variable sales growth is a measure of the annual change in the current level of sales over the prior year which is an indicator of the market performance of the company products. Firm age is also crucial to capital structure and firm performance nexus (Chechet&Olayiwola, 2014). It has also been utilised in prior studies, such as Akinyomi (2013), that established a positive effect of age on RoA and ROE in the Nigerian context. The study by Al Hussaini (2018) using a large sample from Bahrain, Kuwait and Oman found a positive effect of age on leverage. However, for individual sub-samples the RLS showed that age was negative in Bahrain and Oman; but, positive in Kuwait.

Figure 3: Conceptual Framework.



The conceptual model shown in Fig. 2 illustrates the central focus of the study (depicted as red ovoid for DER, Performance parameters and Effective tax rate, which corresponds to the independent variable, the Dependent variable and the Moderating variable in the study, respectively). The model equally illustrates testable relationships listed and labelled hypotheses 1-14 (H<sub>1</sub> – H<sub>14</sub>) along the lines of the expected relationships. The model illustrates that the Capital Structure (CS) of firms (manufacturing and non-finance and services companies listed on the floor of Nigeria's Stock Exchange) may be categorized as Debt finance and Equity

finance. Debt and Equity finance as illustrated by the arrow shows that most firms utilise a mixture of the two-giving rise to the DER which is a dynamic mix of debt and equity in accordance with industry demands, organisational needs and the cost of the financial instrument. Consequently, the utility of DER may determine certain organisational outcomes such as performance. In this context (of performance), five performance parameters were of interest, namely, RoA, EPS, Tobin's Q, EBIT and EBITDA. This influence accounts for statistical testing leading to the formulation of hypotheses 1-5 (H<sub>1</sub>-H<sub>5</sub>).

This dynamic mix (DER) may be influenced and determined by the term structure acceptable to the firm in this instance (H<sub>6</sub>). It (term structure) may also influence and determine the general performance outcomes (H<sub>7</sub>) when considering the importance of timing (as term structures can be long-termed or short-termed) and the cost of finance options. Also central to the study is the influence of organisational tax management depicted in the current study as ETR. The model proposed that taking advantage of effective translation by an organisation may influence a firm's mixture of DER finance instruments (H<sub>8</sub>) and may equally, in the long run, influence and determine a firm's organisational outcome, especially the holistic performance of the firm (H<sub>9</sub>). Thus, the model recognises the influence of ETR as a critical factor in organisational inputs (DER options) and outputs (performance) and therefore expects that ETR will moderate the relationship between inputs (DER) and outputs given the ETR independent influence on both the inputs (DER) and output (performance). Thus, the model expects that the relationship between DER (as input) and performance parameters using RoA, EPS, Tobin's Q, EBIT and EBITDA (as output), as depicted in hypotheses 1-5, will be moderated by ETR, which provided statistically testable observation as  $H_{10} - H_{14}$ .

The basis for the proposed model has been richly supported by conceptual, theoretical and empirical literature which unilaterally suggests that capital sources and dynamics are proximal factors of organisational outcomes such as performance and that by taking advantage of effective tax management (ETR), a firm may hope to reduce another cost there to their productivity by moderating the direct cost of DER on the organisational processes. Given the above, this model has thus been found to fill contentious gaps in the literature supporting that firms can choose appropriate tax approaches which can help them reduce the cost of debts and equity mix in their financing in accordance with their needs and the affordability of the DER cost.

Deductively, the model may be briefly represented in line with the objectives of the study, showing statistically measurable variables of the study as thus:

- 1. DER + Performance (RoA)
- 2. DER + Performance (EPS)
- 3. DER + Performance (Tobin's Q)
- 4. DER + Performance (EBIT)
- 5. DER + Performance (EBITDA)
- 6. Term Structure of debt + DER
- 7. Term Structure of debt + Performance (Tobin's Q)
- 8. ETR + DER
- 9. ETR + Performance (RoA)
- 10. DER + ETR + Performance (ROA)
- 11. DER + ETR + Performance (EPS)
- 12. DER + ETR + Performance (Tobin's Q)
- 13. DER + ETR + Performance (EBIT)
- 14. DER + ETR + Performance (EBITDA)

Summarily, the model has five fundamental parts: 1) the relationship between DER and Performance parameters; 2) the relationship between the term structure of debt and DER; 3) the relationship between term structure and performance; 4) the relationship between ETR and DER; 5) the relationship between ETR and performance parameters. Therefore, the model is in line with the literature on organisational and corporate financing and management and is poised to provide the basis for closing literature gaps on capital structure management and firm performance.

## 2.7 Summary of Reviewed Literature.

The main thrust of the literature review was to provide theoretical and empirical basics for the conceptualised relationships. These relationships can be ideally itemised as follows:

-The relationship between the capital structure of the organisation (debt-to-equity ratio) and the organisation's performance (RoA, EPS, Tobin's Q, EBIT, EBITDA).

-The relationship between the term structure of debt and capital structure (DER) of the organisation.

-The relationship between the term structure of debt and an organisation's performance

-The relationship between effective tax rate and organisation's capital structure (DER)

-The relationship between effective tax rate and organisational performance

-The influence of effective tax rate on the relationship between capital structure and organisation's performance (RoA, EPS, Tobin's Q, EBIT, EBITDA).

In the conceptual review, Capital is seen as among the critical resources required for the implementation of organisational and business goals. Hence, the sources and structure of financing are equally important (See Hassan et al, 2021). Thus, the capital structure was conceptualised as methods and sources of the organisation or firm's financing of their operations and production processes in line with their goals, whether in the short-term, medium-term, or long-term. In this study, the capital structure in review is DER financing. Debt-to-equity (DER) is a capital structure which utilises a blend of long and short-term debt and equity capital [retained earnings, ordinary and preference shares, etc.] adopted by a firm in

financing business operations (See Ngatno *et al.*, 2021). The DER mixes in a firm's financing in consideration of the short and long-term financial needs of a firm (See Mangku *et al.*, 2021).

The importance of capital structure, such as using DER, is informed by the fact that each type of capital structure comes with associated costs. Thus, CS such as DER has costs and consequences and firms tend to choose cheaper ones with long-term sustainability (Hasan *et al.*, 2021; Nelson & Peter, 2019). The cost or the consequences of each type of capital structure were theoretically supported by the PoT (See Adair &Adaskou, 2015), which propounded that internal financing of debt is usually preferred while equity is usually the last option. This is because of the cost differentials and the consequences on the organisation's productive processes. Hence, the assumptions of the PoT theoretically support that capital structure affects performance and further support that the purpose of capital structure is to reduce the cost of financing options adopted by organisations. This is so because a firm, as it evolves, is likely to go from cheaper to costlier options given its leverage.

Empirical supports in line with the theoretical assumptions were equally reviewed and were found to be in tandem with this assumption. For instance, the empirical review of Okore and Nwasiubu's (2022) study found among publicly traded food and beverage firms in Nigeria that DER impacted GPR, NPR, ROE & RoA; thus, the findings confirmed both the conceptual definitions and PoT underpinnings. The finding of Tajudeen *et al.* (2021), which found that performance is a major consequence of capital structure choice supporting the concept and theory of capital structure and performance, was also reviewed because it was relevant to establishing the importance of capital structure and its relationship with organisational outcomes such as performance.

In the DER mix, it was found in the literature that debt financing may favour profitability in the short term, whereas equity financing guarantees long-term profitability; hence, in the long term, equity is cheaper (See Ramli *et al.*, 2019). This is because the cost of equity financing over a long period of time overtakes debt. The literature further revealed that debt, however, has other encumbrances, such as its funding requirement and direct costs, although cheaper than equity, are usually harsh on the organisation. Consequently, the characteristics and implications of debt and equity financing have been debated in literature as the true reason why organisations must evaluate their choices more appropriately, given their organisation's circumstances. From the ongoing, it is seen in the literature that the choice of funding options is sensitive to the peculiarities of the firm, the sector involved and the short/long-term goals of the firm (See Sikveland *et al.*, 2022; Hedau *et al.*, 2018; Kieschnick & Moussawi, 2018). From the literature appraisals on capital structure and the use of DER methods, it is apparent that organizations must take advantage of cheaper and more suitable capital structures as a leveraging technique. Thus, the literature supports that leveraging is the most important factor in CS decisions, especially in the use of DER, such that a percentage of debt is also part of the firm's total capital (See Hidayat *et al.*, 2020).

According to the theoretical works of literature reviewed, this leveraging art using a favourable capital structure is at the centre of financing options as a determinant of organisational performance. For instance, literature contends that organisations may evaluate market seasons and events to determine when and how to obtain cheaper loans or when to invite the public to subscribe for equity financing. This approach, according to literature, is the theoretical underpinning of Lucas and McDonald's (1990) MTT, which is suggestive that prevailing market situations and a firm's situation largely determine the choice of capital structure (Lucas & McDonald, 1990). Reviews also reveal that MTT may be closely substituted with the underpinnings of Baker and Wurgler (2000), who emphasised that HOT and COLD phases of economy and market setting/activities pre-determine the use of equity. Further

support for leveraging cheap and convenient financing options was also found in the AcT of Jensen and Meckling (1976), which emphasised the impact of internal mechanisms and external factors in determining the cost of a firm's financing.

According to the literature, most of the above theoretical assumptions have been examined and tested empirically to understand them more. For instance, in their reviewed study, Orji and Agubata (2021) confirmed that using DER as a form of capital structure affects ROE as most Nigerian businesses rely healingly on short-term loans to boost higher performance. Their findings indicate that preferably in the Nigerian capital market, which is yet underdeveloped, debts through informal and unconventional means rather from financial institutions remain financing options adopted by the majority, while equity financing is less patronised. However, it is much more flexible and costlier in the long term. So, more organisations are willing to use internal arrangements as a route to their financing options. This is supported by Pandey and Sahu's (2019) study which found an interrelationship among debt financing, agency cost and firm performance (ROE). The importance of financing options to organisational success is also contended in Kenn-Ndubuisi, Ifechi, and Nweke's (2019) study, which found a negative effect of the debt-to-equity ratio on EPS using the ROE model.

Another measurable factor of the study is the effective tax rate. In conceptualisation, the tax was seen as a liability owed for operating a business and reduces a firm's distributable profit (See Dang & Tran, 2021). This, according to literature, emanates from the hosts' (government) effort to provide an enabling environment for business and other organisational operations in the environment. Scholars contended in the literature that tax is avoidable legally & can be legally reduced without attracting additional fines. In this instance, Wang *et al.* (2020) opined that stakeholders are contentious of the fact that an organisation can utilise various tax approaches to reduce its cost on productive or operational processes. When actualised, it helps
to boost performance. For instance, an effective tax rate can reduce finances spent on taxation while increasing distributive income as ROE and EPS (See Wang *et al.*, 2020).

The idea of utilising tax deduction was conceptualised on the principle that most taxes mgt, such as avoidance, tend to lower the normal tax payments by using loopholes in tax laws, e.g., avoidance tools, transfer price manipulations, tax holidays/havens, etc., to maximise profits and by extension performance (See Delgado *et al.*, 2018). Literature believes that by following any of the above methods, companies can legally reduce amounts payable as tax in each financial year and, by so doing, can positively influence their organizational outcomes. Most firms or organisations optimise their tax obligations by adopting an ETR, which may be a cash ETR or GAAP ETR. In literature, ETR is often denoted as the truest applicable method which affects corporate finance and performance (See Wang *et al.*, 2020).

Regarding effective tax management, the literature is consistent in that theoretically effective tax rates adopted by organisations counter the financial deductions from firms due to tax obligations. This theoretical underpinning has been articulated in literature by Adair and Adaskou (2015) as Trade-off Theory (ToT). Tax benefits of debt & bankruptcy costs can be utilised in a firm's capital structure to the advantage of a favourable organizational outcome. ToT supports the idea that effective tax mgt through any means can provide extra funds & increase profit/ performance. Hence, ETR can improve organisational inputs in the form of capital structure and organisational outputs such as performance. The relationship of utilising tax benefits supports the model that ETR will influence the relationship between DER and Performance which can be represented as the DER + ETR + Performance model. There are other theories which support the utility of the effective tax rate, such as the Agency cost theory, which supposedly supports internal mechanisms for cost reduction and profit maximization. Thus, the literature supports the assumptions of PoT implicating the ETR-DER model.

More so literature is empirically consistent on the relationship of effective tax rate with the organizational outcome. Findings from studies reviewed indicated that ETR has been instrumental in reducing the cost of organisational operations and productivity, which in the long run enhance organisational productivity, performance and profitability. Authors argued that deductible finance, which may be gained from ETR, may help organizations reposition and maximize their inputs. For example, Michalkova *et al.* (2021) found a negative dependence on profitability & leverage, which aligns with tax interest and non-tax benefits in Slovakia. This finding supports the idea that organisations with ETR may be more profitable and productive than those without. Literature also considers Igbinovia and Ekwueme's (2018) findings to provide adequate linkage. The authors found that corporate tax evasion and tax shields have a beneficial impact on shareholder returns in listed non-financial enterprises in Nigeria. Also, Carrolline *et al.* (2021), in support of this linkage, found the beneficial effects of ETR on capital structure and overall performance.

Furthermore, the literature was consistent in that there are many approaches to utilising tax effectiveness by an organization. For instance, various dimensions of tax management, such as avoidance technique, tax shield and tax heaven, have promised better leverage on capital structure, especially DER - Dang & Tran (2021), depending on what applies to a firm's sector and organisational circumstances. Organisations usually utilise their particular circumstances to obtain tax incentives, which they can manage effectively to lower the cost they pay on taxes and the cost of their productivity or operations. In this line of thought, ETR could determine organisational outcome parameters. In this study, it has been known to relate well with performance parameters. Thus, tax, if managed effectively, could determine the nature of capital structure and could also uniquely determine performance parameters. For example, the

relationship between ETR on RoA and ROE was established as promising by Khuong *et al.* (2020).

### 2.8 Research Gaps identified during the study.

This study articulates how the investigation addresses significant gaps in the understanding of capital structure, tax avoidance, and firm performance in developing economies. Through careful analysis of existing literature and methodological considerations, the research has identified and addressed several key research gaps that warrant attention.

## Major Research Gaps Identified:

 Methodological Gap in Tax Avoidance Studies The thesis identified that previous studies on tax avoidance had predominantly focused on developed economies, with limited research in developing country contexts like Nigeria. This created a significant gap in understanding how tax avoidance mechanisms operate in environments with different institutional frameworks.

## How it was addressed:

- The study employed a comprehensive methodological approach using panel data analysis
- Incorporated both fixed effects and random effects models to account for countryspecific factors
- Used the Generalised Method of Moments (GMM) to address potential endogeneity issues
- Applied robustness checks using worldwide governance indicators

 Limited Understanding of the Moderating Role of Tax Previous research had typically examined capital structure and tax avoidance as separate phenomena, without exploring their interactive effects on firm performance.

## How it was addressed:

- Introduced the Effective Tax Rate (ETR) as a moderating variable
- Developed a novel conceptual framework incorporating the moderating effects
- Tested multiple performance metrics (ROA, EPS, Tobin's Q, EBIT, EBITDA) to capture various dimensions of firm performance
- Applied moderated regression analysis to test the interaction effects
  - Sectoral Focus Gap Prior studies in Nigeria had concentrated mainly on conglomerates, consumer goods, and user-industrial sectors, leaving a gap in understanding the manufacturing sector specifically.

## How it was addressed:

- Focused specifically on manufacturing firms listed on the Nigerian Stock Exchange
- Used a sample of 66 non-financial companies across nine sectors
- Collected data over a 10-year period (2011-2020)
- Applied sector-specific controls in the analysis
  - Theoretical Integration Gap Previous research often relied on single theoretical frameworks, leading to incomplete understanding of the phenomena.

## How it was addressed:

- Integrated multiple theoretical perspectives (Pecking Order Theory, Trade-off Theory, Agency Cost Theory, and Market Timing Theory)
- Developed a comprehensive theoretical framework that acknowledges the complementary nature of these theories
- Applied the integrated framework to interpret results in a more nuanced way
  - Temporal Gap in Nigerian Context There was limited empirical evidence on the period following the adoption of IFRS in Nigeria and the introduction of new corporate governance guidelines.

## How it was addressed:

- Selected study period (2011-2020) to capture the effects of IFRS adoption
- Incorporated the impact of the Financial Reporting Council's 2019 corporate governance guidelines
- Analysed the data considering these regulatory changes
  - Measurement Gap Previous studies often used limited performance measures, potentially missing important aspects of firm performance.

## How it was addressed:

- Employed multiple performance measures (ROA, EPS, Tobin's Q, EBIT, EBITDA)
- Incorporated both accounting-based and market-based measures
- Used control variables to account for firm-specific characteristics
- Applied robust statistical techniques to ensure reliable measurement

7 Contextual Understanding Gap There was limited understanding of how capital structure decisions interact with tax avoidance in the specific context of developing economies.

## How it was addressed:

- Provided detailed analysis of the Nigerian institutional context
- Incorporated country-specific factors in the analysis
- Used worldwide governance indicators as control variables
- Considered the unique characteristics of the Nigerian manufacturing sector

## 2.9 Deductions from literature for the testing the variables of the study.

Deductions from the reviewed literature set out to inform the reader of the integral role of capital structure in organisational operations and financing and, consequently, conceptualised capital structure as a favourable financing option with less cost to the organisation considering the demand of the firm's sector and nature of operations. In the study, three things were particularly of concern: the nature of the capital structure utilised and adopted by the firm, its relationship with the firm's performance (evaluated under conceptualised performance parameters of interest) and the role of effective tax management to this relationship.

First, capital as a critical organisational resource was reviewed as a very important tool in the productivity and operations of the organisation and hence, how organisations go about it and structure their flow of capital for productive purposes is equally a critical issue in organisational life. This study examines the critical role of capital as an organisational resource and how its structure and allocation affect productivity and operations. Specifically, the study focuses on the concept of capital structure, which refers to the financing sources utilised by organisations, including both long-term and short-term debt and equity. Capital structure aims to maximise profits and satisfy stakeholders. The two main types of financing sources, debt and equity, are discussed in detail. Debt is characterised as a short-term, more costly financing instrument, while equity, in the form of share contributions, is considered a long-term and less costly financing instrument. Despite their differences, both debt and equity have unique attributes, advantages, and disadvantages that inform their usage. Organisations may choose to utilise one or a combination of both financing sources based on their specific needs and preferences.

The usage of the above financing mixture (of debt and equity) is what has given rise to the concept of the Debt-to-Equity ratio, which assumes that a competitive firm may have at some point utilised a mixture of the financial options in order to maximise the advantages inherent in each of them where they are applicable. By so doing, such firms (who adopt the debt and equity mixture model) hope to utilise the advantages of short-term and long-term gain to strengthen the financing options available to their firms and also hope to maximise their organizational performance and productivity.

From the foregoing, six things are deductible: 1) Capital is essential for ensuring organisational operations and productivity. 2) The sources of capital for organisational operations determine their costs. 3) The duration of usage of the determined term application of the capital, whether short or long. 4) The usage of capital in accordance with the source may be regarded as an instrument for financing. 5) Both short and long instruments can be used as a mixture to give debt-equity-ration, which is widely regarded as capital structure dynamics. 6) Depending on the nature of the organisation, its operations and sector peculiarities, the use of this mixture in financing options because they have cost can impact positively or negatively on organisational outcomes such as performance and productivity. These deductions adduce

that the characteristics inherent in capital structure dynamics, especially regarding the differences in the cost of each type of capital and the duration of its usage, will ultimately determine the usage output, which is synonymous with organizational performance. Hence, an expected linear relationship is possible given that:

Sources of capital (debt or equity) as organisational input can determine performance as organisational output. The given at (a) is possible because the inputs (sources of capital given as debt, equity or a mixture of both) have variable (non-static) costs whose characteristics (of the variable cost) fluctuate the expectations on the output, which is performance. Thus, the variability of the cost of the sources of capital is the potential factor which determines the possible expected output (performance) which responds to the variability of the sources of capital. Hence, it stands that this possible variability (due to different sources of capital, their term and their cost) can be measured and determined as the cause of the observed fluctuations in organisation output variable performance.

To understand the consequences of the sources of capital on the organisation's output variable (performance), it is important to understand which is conceptualised as the organisational outcome or output. By output or outcome, it means the aim or purpose for which organizational resources were assembled. This could be profit, RoA, earnings per share (EPS), the total accruable organisational value ascribed as Tobin's Q, EBIT, earnings before interest, tax, depreciation and amortisation (EBITDA) or any other measurable output. The different possible outputs or outcomes imply that certain outputs or outcomes may be dependent on the variability of the inputs (source of capital, either debt, equity or a mixture), especially the fluctuations of their cost, the term duration (short or long) and conditions governing the source capital. Given this observation, it will be in order to determine the possible relationship

between the inputs (debt-to-equity ratio as sources of capital structure) and the outputs (performance parameters). This provides us with testable statistical derivatives as:

-Relationship between Debt-to-equity ratio (as organisation input) and return on assets (RoA) as the organisational output.

-Relationship between Debt-to-equity ratio (as organisation input) and earnings-per-share (EPS) as the organisational output.

-Relationship between Debt-to-equity ratio (as organisation input) and Tobin's Q as the organizational output.

-Relationship between Debt-to-equity ratio (as organisation input) and EBIT as the organisational output.

-Relationship between Debt-to-equity ratio (as organisation input) and earnings before interest, tax, depreciation and amortisation (EBITDA) as the organisational output.

In the literature review, this study argued that the ratio of debt-to-equity capital financing in a firm may be informed by the duration (term) of the financing. Terms here mean the expected duration for which the capital will be used before it is repaid or re-used. The choice of term is informed by the needs of the organisation in relation to the time needed for production processes and other engagement of the capital. In literature, evidence abounds that the duration of capital usage or its engagement as a means of production is the most significant determinant of the cost of capital. Considering this implied cost, literature insists that most firms use appropriate ratios in a way to reduce the duration of capital usage and invariably reduce the cost of the capital. Hence, the study considers that there is a relationship between the term structure and the type of capital structure adopted and implemented by a firm. This provides us with testable statistical derivatives as:

Relationship between debt-to-equity ratio and the term structure of debt.

Given the importance of the duration of capital use, which also determines the level of capital cost, the literature further contends that the term usage of capital also has a relationship with the firm performance. This is because costly capital, which is used for a longer duration, may reduce the firm's profitability and returns, which also may weaken the organizational value. Thus, this instance provides us with another testable derivative:

Relationship between the term structure of debt and firm performance.

Another interest of this study is to determine whether the tax (considered in the current study as an effective tax rate) has any relationship with both the input factor (type of capital structure) and the output factor (performance). In literature, tax is presumed to be a big influence on organizational performance, especially for public liability companies quoted on the floor of the national stock exchange. This is deemed so because governments operating business environments in line with the economic blueprints of their central banks set the regulatory tax rate for different sectors deemed to be accruals for providing a conducive business environment and enablement. The extent to which the set tax rates influence and determine organisational overall performance also implies that organisational management takes their influence into consideration in the financial planning for the firm. Thus, this situation provides us with yet other testable derivatives as the Relationship between effective tax rate and debt-to-equity ratio financing relationship between effective tax rate and firm performance.

The relationship of the tax factor (effective tax rate) does not stop at its influence on input factors or the output factors; it can also influence or regulate how the input factors (capital structure) may influence the output factors (performance parameters). In this regard, scholars argued that when a tax system is effectively utilised and applied, it may determine the nature of an organization's inputs and, consequently, its outputs. This is important when an organization can take advantage of certain favourable government tax policies to determine and regulate its capital structure, such as the natural ratio of debt-to-equity to be subscribed, which uniquely determines the organisation's performance at the end of a financial year. In this regard, the tax could be seen as an important determinant for the choice of capital planning and the outcome of the determined choices. Thus, this situation provides us with yet other testable derivatives as:

The effective tax rate will influence the relationship between the debt-to-equity ratio and return on assets (RoA).

-The effective tax rate will influence the relationship between the relationship between debtto-equity ratio and earnings-per-share (EPS)

-The effective tax rate will influence the relationship between the relationship between debtto-equity ratio and Tobin's Q

-The effective tax rate will influence the relationship between the relationship between debtto-equity finance and EBIT

-The effective tax rate will influence the relationship between the relationship between debtto-equity finance and earnings before interest, taxes, depreciation and amortisation (EBITDA).

#### 2.10 Literature Appraisal on Study Methodology.

The methodology, which refers to the systematic and transparent process of collecting, analysing, and interpreting data to answer research questions (Creswell & Creswell, 2018), is both the foundation of empiricism as well as the backbone of scientific research, ensuring its rigour and validity (Gerring, 2007). In exploring the impacts of the

capital structure of manufacturing firms on performance (with RoA, Tobin's Q, EPS, EBIT and EBITDA as performance parameters), in line with requirements of empiricism, this study utilised the core components of research methodology, focusing on quantitative method (examination of existing secondary data) and their specific and contextual applications. Data collection and as well their proper analysis (typically dependent on the nature of statistical methodology) is also a concern of scientific inquiry because the veracity of the result depends on the appropriateness of the statistical methods and analytical tools applied and adopted for arriving at the result. The consistency of results obtained can be verified based on the consistency of usage and adoption of those methods and statistical tools in previous methods.

Against this backdrop and the consistency demands of the methodological approaches to this scientific investigation, the study identified an overall research design which covers the entirety of the structure, which in the views of Bryman and Bell (2011) defines the adopted method, design, research questions, determination and selection of participants or data sources and determining collection and analysis method. The nature and structure of the study are best suited for a quantitative study which according to Sürücü and Maslakci (2020) is an empirically rigorous, objective type of study which facilitates statistical analysis with outcomes as valid, reliable and generalisable findings in line with the goals of quantitative method research to provide numerical data for objective analysis and statistical testing. For instance, Ngoc *et al.* (2021) utilised this design to explore the impact of capital structure on the financial performance of logistic service providers listed on the Ho Chi Minh City Stock Exchange. Their study design shares semblance with the current study which adopted a quantitative method approach using existing secondary data from the Nigeria Stock Exchange.

Being quantitative research exploring the effects of capital structure (debt-equity ratio) on a firm's performance (with RoA, Tobin's Q, EPS, EBIT and EBITDA as

performance parameters), the study pursued a correlation design to enable it to gather data from a representative sample of a population by means of utilising available secondary data (Babbie, 2019) in order to predict higher relationship effects. According to Cohen *et al.* (2013), this enables the examination of the non-causal relationship between variables without manipulating data. In line with this, the current study adopted the regression method which is a kind of correlation design to investigate the non-causal relationship between the predictors and the criterion variables on the effect of capital structure adopted by nonmanufacturing firms on firms' performance using performance parameters. This adoption is supported by Gonzalez-Ramos *et al.* (2023) who explored initial exploration of the relationship between capital structure and firm performance using correlation design and identified a potential premise for further predictive investigation.

The use of correlation design is deeply rooted in management science, especially business-related studies, because of the inherent challenge of studying historical secondary data as a basis for analysis. For example, Abdullah and Tursoy(2021) utilised correlation design to study capital structure and firm performance as evidence of Germany under IFRS adoption. This study is concurrent with the researcher's investigation. Similarly, Pham (2020) adopted a correlation design in exploring the effect of capital structure on the financial performance of Vietnamese listing pharmaceutical enterprises. Thus, both studies above exemplified the adequacy and appropriateness of using correlation design in studies such as the one carried out by the current researcher to investigate relationships using secondary data.

According to Martins *et al.* (2018), the use of secondary data is founded because of its many beneficial effects such as being cost-effective, readily available, facilitating large sample sizes and generalisability. Thus, adopting a secondary data approach to utilise the panel data method in the analysis is consistent with the scientific process and empiricism. For instance, both Abdullah and Tursoy (2023) and Ramli *et al.* (2019) utilised secondary

data to explore the effect of corporate governance on financial performance: evidence from a shareholder-oriented system and the determinants of capital structure and firm financial performance in A PLS-SEM approach as evidence from Malaysia and Indonesia respectively.

In line with the principles of secondary data collection using the quantitative method (Bryman & Bell, 2011), the current study utilised panel data accessed through organisational archives, and government reports such as the Nigeria Stock Exchange data on manufacturing firms. Panel data analysis, according to Ibrahim and Isiaka (2020), controls for unobserved firm-specific effects, captures dynamic relationships over time, and increases efficiency. The works of Egberi (2022), which investigated the risk monitoring committee and firm value of listed oil and gas companies in Nigeria, utilised the panel data method, which is in support of the current study. Also, the study by Endri (2020), which utilised long-term analysis of banking share price and the application of a panel data regression model, grossly supports the deployment of the panel method of analysis as used in the ongoing study on the effects of capital structure on firm performance.

Having adopted quantitative research using secondary data sources and correlation design using a panel data approach, the study equally adopted regression statistics in order to effectively analyse non-causal relationship effects among variables from the panel data. In line with the general principles of quantitative analysis, regression quantifies the relationship between variables, estimating the impact of one on the other. The type of regression analysis adopted is the OLS, which is a common type of regression used in business analysis for a large dataset in the panel. This type of regression, according to Arkes (2023), enables the researcher to predict and estimate the effect of some explanatory or predictor variable (capital structure denoted in the current study as the debt-equity ratio) on the dependent or criterion variable denoted as firm performance parameters – RoA, Tobin's Q, EPS, EBIT, and

EBITDA). The use of regression analysis as a statistical tool is equally empirical and consistent with research methodologies. For example, Boachie (2023) adopted the use of regression statistics to investigate corporate governance and financial performance of banks in Ghana using ownership structure as the moderator. Boachie's studies are equally consistent with those of Abdullah and Tursoy (2023), who adopted a regression model to examine the effect of corporate governance on financial performance as evidenced by a shareholder-oriented system. In both instances, regression statistics played pivotal roles in establishing predictive relationships among the variables.

Furthermore, the study method and design equally adopted a moderation style of regression analysis to explain the performance of focus variables in the presence of other variables of interest. The idea of moderators is to test if a third variable, like firm size, influences the relationship between capital structure and performance. This is because moderated regression identifies potential contingent effects of other variables on the relationship between capital structure and performance (Park & Yi, 2023). In the current study, the researcher is interested in the moderating roles of the ETR on the selected performance parameters (RoA, Tobin's Q, EPS, EBIT, and EBITDA). For instance, Ronoowah and Seetanah (2023) investigated the moderating and mediating effects of corporate governance and capital structure on firm performance; their study envisaged that the nature of corporate governance may mid-wife the capital structure outcomes as performance. Thus, using moderated regression here implies that the relationship between capital structure and firm performance may be dependent on the inherent corporate or management governance in place in the organisation. Also, Ngatno et al. (2021) explored the moderating effects of corporate governance mechanisms on the relationship between capital structure and firm performance in the same instance.

The study also ran certain basic robustness analyses to verify and confirm the existing moderated regression method using the panel data style of the correlation design, which is consistent with business analysis. In modelling the analysis, the study adopted the FEM and REM to account for unobserved firm-specific effects in panel data analysis. This approach not only yields greater accuracy but also strengthens the robustness of the analytical system (deHaan, 2021). Previous studies confirm that this approach improves empiricism and the quality of results. For instance, Mubeen *et al.* (2020) investigated the effects of market competition, capital structure, and CEO duality on firm performance and the mediation analysis by incorporating the GMM model technique. Their study extensively utilised the FEM/REM analysis to bolster the robustness of their analysis.

Another robustness analysis performed was the use of the heteroskedasticity test (HST), which is utilised to evaluate for unequal variances in error terms, which can potentially invalidate standard OLS results in the regression model. According to Pötscher and Preinerstorfer (2021), HST ensures the validity of standard OLS results model assumptions. There is evidence that HST is a common feature in establishing robustness in business analysis. For example, Ayaz *et al.* (2021) conducted HST as a robustness check while running an empirical investigation on the impact of capital structure on firm performance using data from Malaysia. Thus, their use of HST aligns with the current study and supports its use in the current study as a good measure of robustness.

Furthermore, this study employed the services of the VIF test as another way of bolstering the robustness analysis. The VIF test accounts for multi-collinearity to ensure the independent effects of each variable of performance. This is because VIF identifies and manages multi-collinearity among independent variables, improving the reliability of regression results (Ngoc *et al.*, 2021). For instance, Ngoc *et al.* (2021) using the VIF test for

robustness explored the impact of capital structure on the business performance of real estate enterprises listed at Ho Chi Minh City Stock Exchange. These instances consistently confirm the adoption of the VIF test in statistical analysis as an important robustness criterion.

In conclusion, recognising the crucial role of methodology in scientific research, this methodological appraisal delves into the research method adopted to examine the impact of capital structure on listed manufacturing firm performance in the Nigeria Stock Exchange, employing secondary data and quantitative methods. Grounded in established research, the chosen research methodological approaches emphasise rigour and accuracy. Leveraging existing data from the Nigeria Stock Exchange, the study adopts a quantitative approach, utilising secondary data analysis. A correlation design was implemented to explore non-causal relationships between variables, while panel data analysis delves deeper, controlling for firm-specific effects and capturing dynamic relationships over time. To quantify these relationships, regression analysis takes centre stage, specifically OLS and moderation analysis. Furthermore, the study incorporated robustness checks like the FEM, REM, Heteroskedasticity Test (HST), and Variance Inflation Factor (VIF) test, solidifying the accuracy and generalisability of the findings. By drawing upon existing research and employing well-suited quantitative techniques, this study establishes a robust and justified methodology to tackle the chosen research question and proper examination of hypotheses.

# Table 2: Methodological Review

Impact of debit-to	o-equity	ratio on firm perfor	rmance								
Author(s)	Year	Paper Title	Journal	Country	Ran k	Data	Firms	Perio d	Method	Findings	Commentary
Boshnak	2023	The impact of capital structure on firm performance: evidence from Saudi-listed firms.	Internationa l Journal of Disclosure and Governance	Saudi Arabia	A <sup>+</sup>	Panel: Secondar y	70 firms	2016-2020	GMM	Std, LTD, TD and DE have a significant negative effect on RoA; while, LTD, TD and DE have a positive impact on ROE and Tobin's Q.	The paper is related to the study. GMM addresses "auto- correlation, heteroscedastic ity, and endogeneity".
Al-Haddad <i>et</i> al.	2023	Does capital structure matter? Evidence from family-owned firms in Jordan.	Journal of Family Business Managemen t	Jordan	$  \mathbf{A}^+$	Panel: Secondar y	107 FOFs	2019-2021	MR	Std and LTD negatively affect FP.	The paper is partially related to the study. OLS consistent with our approach

Ronoowah and Seetanah	2023	The moderating and mediating effects of corporate governance and capital structure on firm performance: Empirical evidence from an emerging	Managerial Finance	Mauritius	A <sup>+</sup>	Panel: Secondar y	38 firms	2009- 2019	Multiva riate regressi on	DA negatively affect ROE and TQ.	The paper is highly related to the study with the exception of the Mediation analysis.
Bui et al.	2023	market. The effect of capital structure on firm value: A study of companies listed on the Vietnamese stock market.	Internationa 1 Journal of Financial Studies	Vietnam	A <sup>+</sup>	Panel: Secondar y	769 firms	2012-2022	OLS; FEM; REM; GLS	DA positively affect RoA, ROE, and TQ. LTD does not significant ly affect TQ; while Std and LTD negatively affect RoA and ROE.	The paper is highly related to the study with the exception of GLS. FEM and REM are consistent with this study.

Ahmed <i>et al</i> .	2023	The relationship between capital structure and firm performance: The moderating role of agency cost.	Risks	Iran	A <sup>+</sup>	Panel: Secondar y	156 firms	2011-2019	FEM	DA negatively affect RoA and EPS and positively influences TQ. DMC negatively affect RoA, EPS and TQ.	The paper is related to the study.
Sharkh <i>et al</i> .	2022	Family values, capital structure, and financial performance: Evidence from a developing country.	Journal of Southwest Jiaotong University	Jordan	A	Panel: Secondar y	e	2015-2021	GMM	LTD and DE negatively affect FP. DA is positively associated with FP.	The paper is related to the study.
Ahmed <i>et al</i> .	2023	Effect of Firm Size on the Association between Capital Structure and Profitability.	Sustainabilit y	Iran	A <sup>+</sup>	Panel: Secondar y	156 firms	2011- 2019	FEM	DA negatively affect RoA (positive with interaction , and also positively	The paper is related to the study.

Mehzabin <i>et al</i> .	2023	The effect of	Asian	28 Asian	В	Panel:	492	2004-	FEM	affect TQ); DA negatively affects EPS (positive with interaction ); DMC negatively affects RoA, TQ and EPS. DA	The paper is
		capital structure, operating efficiency and non-interest income on bank profitability: new evidence from Asia.	Journal of Economics and Banking	countries		Secondar y	firms	2008		negatively affect RoA; and, LTD positively affect RoA.	related to the study. OLS consistent with our approach
Chaudhary <i>et</i> <i>al</i> .	2023	Financial Leverage, Distress, and Firms Performance: Global and	Sustainable Business and Society in Emerging Economies	Global; Pakistan	В	Panel: Secondar y	1879 global; 263 local	2005- 2012	MR	DA negatively affected RoA in the local and	OLS consistent with our approach

		Local Perspective.								global samples.	
Abdullahi <i>et al</i> .	2023	Capital structure and financial performance of listed consumer goods firms in Nigeria.	Nigerian Journal of Managemen t Sciences	Nigeria	В	Panel: Secondar y	19 firms	2017- 2021	OLS	LTD positively affect RoA; while, Std negatively affect RoA.	The paper is related to the study.
Kant <i>et al</i> .	2023	Effect of Capital Structure on Firm Performance: Evidence from Ethiopian Farmers Coffee Cooperatives.	Internationa l Journal of Managemen t and Finance	Ethiopia	B	Panel: Secondar y	9 cooperati ves	2020-2023	OLS; FEM; REM	Std positively affect RoA; DE negatively affect RoA; DA positively affect RoA; EA positively affect RoA. Std positively affect RoA.	The paper used all approaches utilised in the current study.

										negatively affect RoA; DA positively affect ROE; EA negatively affects RoA.	
Dodoo <i>et al.</i>	2023	The effect of capital structure on firm performance: empirical evidence from an emerging economy.	EuroMed Journal of Managemen t	Ghana	В	Panel: Secondar y	15 firms	2008- 2017	OLS; GMM	Std and LTD negatively affect RoA; Std positively affect ROE; LTD negatively affects ROE; DE positively affects ROA and negatively affects ROA and negatively affects ROE.	The paper is highly related to the study.

ul Islam	2023	Capital Structure and Firm Performance: Exploring the Moderating Role of Size.	Dissertation	Pakistan	C	Panel: Secondar y	285 firms	1999- 2019	OLS; FEM; REM; GMM	DA positively affect RoA and ROS; while negatively affects ROE. DA positively affect ROSP and MBV; while negatively affects PE.	The paper is highly related to the study. FEM and REM are consistent with this study.
Alhassan	2021	Capital structure and financial performance of consumer goods companies in Nigeria.	Internationa l Journal of Accounting Research	Nigeria	В	Panel: Secondar y	15 firms	2011-2020	FEM	Std, DE, and LTD positively affect RoA; ROE and EPS.	The paper is highly related to the application of the FEM.
Abdullahi <i>et al</i> .	2023	Capital structure and financial performance of listed consumer	Nigerian Journal of Managemen t Sciences	Nigeria	В	Panel: Secondar y	19 firms	2017- 2021	FEM	Std and DE negatively affect RoA; LTD	The paper is highly related to the application of the FEM.

Islam and Iqbal	2022	goods firms in Nigeria. The relationship between capital structure and firm performance: New evidence from Pakistan	Journal of Asian Finance, Economics and Business	Pakistan	В	Panel: Secondar y	285 firms	1999- 2019	OLS; FEM; GMM	positively affect RoA. DA negatively related to RoA, ROE, and ROS	The paper is highly related to the application of the FEM and GMM.
Okore and Nwadiubu	2022	Impact of capital structure on the profitability of food and beverage firms	IIARD Internationa I Journal of Banking And Finance Research	Nigeria	В	Panel: Secondar y	5 firms	2009- 2018	OLS	DE positively affect GPM, NPM, ROE and RoA.	The paper is highly related to the application of the OLS.
Abdullah and Tursoy	2021	Capital structure and firm performance: evidence of Germany under IFRS adoption.	Review of Managerial Science	Germany	A <sup>+</sup>	Panel: Secondar y	2448 firm years	1993- 2016	OLS; FEM; REM; GMM	DA positively affect RoA and ROE; DA negatively affects stock price.	The paper used all approaches utilised in the current study.

Orji et al.	2021	Effect of debt- equity financing on firm performance in Nigeria.	Journal of Accounting and Financial Managemen t	Nigeria	В	Panel: Secondar y	26 firms	2013- 2020	OLS	DE positively affect ROE.	The paper is highly related to the application of the OLS.
Tajudeen <i>et al</i> .	2021	Influence of Capital Structure on Firms Performance in Nigeria (Evidence from the Pharmaceutical Industry).	Finance and Economics	Nigeria	В	Panel: Secondar y	6 firms	2005- 2017	OLS	Std and LTD negatively affect RoA and ROE; DE positively affect RoA and ROE.	The paper is highly related to the application of the OLS.
Ayange <i>et al</i> .	2021	Effect of capital structure on firms performance in Nigeria.	Universal Journal of Accounting and Finance	Nigeria	В	Panel: Secondar y	15 firms	1999- 2018	OLS; FEM; REM	LTD, DE, and DA negatively affect RoA while Std positively affect RoA; LTD, Std, and DA negatively affect	The paper is highly related to the application of the OLS.

										ROE; DA and LTD negatively MV and Std and DE positively affect MV.	
Mbonu and Amahalu	2021	Effect of firm characteristics on capital structure of insurance companies listed on Nigeria stock exchange.	Internationa l Journal of Managemen t Studies and Social Science Research	Nigeria	В	Panel: Secondar y	14 firms	2011-2020	OLS	Firm size positively affects DER. Liquidity and revenue growth negatively affect DER.	The paper is moderately related to the choice of control variables.
Nuryani and Sunarsi	2020	The Effect of Current Ratio and Debt-to- Equity Ratio on Deviding Growth.	JASa (JurnalAkun tansi, Audit dan SistemInfor masiAkunta nsi)	Indonesia	В	Panel: Secondar y	1 firm- PT. Gajah Mas	2010-2018	MR	DER negatively affect dividend growth.	The paper is highly related to the application of the OLS.

Rusdiyanto <i>et al</i> .	2020	The Effect Of Earning Per- Share, Debt-To- Equity Ratio And Return On Assets Onstock Prices: Case Study Indonesian.	Academy of Entrepreneu rship Journal (AEJ)	Indonesia	В	Panel: Secondar y	N/A	2015- 2017	MR	DER negatively affect stock prices.	The paper is highly related to the application of the OLS.
Nelson and Peter	2019	An empirical analysis of the effect of capital structure on firm performance: Evidence from microfinance banks in Nigeria.	European Journal of Accounting, Auditing and Finance Research	Nigeria	В	Panel: Secondar y	39 firms	2009-2018	OLS	LTD and DE positively affect ROE; while DER negatively affects ROE.	The paper is highly related to the application of the OLS.
Ramli <i>et al</i> .	2019	Determinants of capital structure and firm financial performance— A PLS-SEM approach: Evidence from	The Quarterly Review of Economics and Finance	Malaysia & Indonesia	A <sup>+</sup>	Panel: Secondar y	5975 firm years- Malaysia ; 1844 firm years-	1990- 2010	FEM	DER positively affect financial performan ce.	The paper is related. However, the application of SEM differs from this study.

		Malaysia and Indonesia.					Indonesi a				
Eriki and Osifo	2017	Effect of debt- equity mix on the financial performance of downstream oil and gas firms in Nigeria.	Journal of Economics & Finance	Nigeria	В	Panel: Secondar y	12 firms	2011-2015	FEM	DA and DCE positively affect ROE, while DC and LDCE negatively affect ROE. DA and DCE positively affect RoA; while DC and LDCE negatively affect RoA;	The paper is highly related to the application of the OLS.
Akeem <i>et al</i> .	2014	Effects of capital structure on firm's performance:	Journal of Finance and Investment Analysis	Nigeria	В	Panel: Secondar y	10 firms	2003-2012	OLS; FEM; REM	TD and LDCE negatively affect ROI;	The paper is highly related to the application of the PRT.

		An empirical study of manufacturing companies in Nigeria.								while DE positively affects ROI. TD negatively affect RoA; DE and LDCE positively affect RoA.	
Impact of the ter	m struct	ure of debt on firm	performance								
Nazir <i>et al</i> .	2021	Debt financing and firm performance: empirical evidence from the Pakistan Stock Exchange.	Asian Journal of Accounting Research	Pakistan	A <sup>+</sup>	Panel: Secondar y	30 firms	2013- 2017	OLS; FEM; REM	Std and LTD negatively affect RoA and NPM.	The paper is highly related to the application of the PRT.
Li et al.	2021	Debt maturity, and corporate performance.	N/A	China	В	Panel: Secondar y	77 firms	N/A	MR	Firms with longer- term debt have higher profitabilit y and	The paper is highly related to the application of the PRT.

										better financial performan ce than those with shorter- term debt.	
Saka <i>et al</i> .	2020	Impact of debt structure on financial performance: evidence from Nigerian firms.	N/A	Nigeria	В	Panel: Secondar y	N/A	N/A	MR	A positive relationshi p between LTD and FP, but a negative relationshi p between Std and FP.	The paper is highly related to the application of the PRT.
Zhou <i>et al</i> .	2021	Impact of capital structure on firm performance: evidence from the United States.	N/A	United States of America	В	Panel: Secondar y	50 firms	N/A	MR	DE negatively affect FP.	The paper is highly related to the application of the PRT.
Trong and Nguyen	2021	Firm performance: the moderation	Journal of Asian Business	Vietnam	A <sup>+</sup>	Panel: Secondar y	669 firms	2008- 2018	MR; SGMM	DE negatively affect	The paper is highly related to the

Ali et al.	2021	impact of debt and dividend policies on overinvestment. Debt maturity, risk and performance: Evidence from Pakistan	and Economic Studies N/A	Pakistan	В	Panel: Secondar y	N/A	N/A	MR	EBIT; EBT and EAT. LTD positively affect FP; while, Std negatively affect FP.	application of the PRT. The paper is highly related to the application of the PRT.
Pham and Nguyen	2020	Debt financing and firm performance: The moderating role of board independence.	Journal of General Managemen t	Vietnam	$\mathbf{A}^+$	Panel: Secondar y	300 firms	2013- 2017	FEM; REM	DE negatively affect RoA and ROE.	The paper is highly related to the application of the PRT.
Mamaro and Legotlo	2020	The Impact of Debt Financing on Financial Performance: Evidence from Retail Firms Listed on JSE.	The Journal of Accounting and Managemen t	South Africa	В	Panel: Secondar y	26 firms	2010- 2019	FEM; REM; GLS	TDA positively affect ROE; while LTDA negatively affect ROE.	The paper is highly related to the application of the PRT.

Li	2020	The effects of	Thesis	Orbis	С	Panel:	303	2011-	OLS;	Std; LTD	The paper is
		external debt		database		Secondar	firms	2019	FEM;	and TD	highly related
		financing and				у			REM	positively	to the
		internal								affect	application of
		financing on								ROE.	the PRT; and
		firm									several
		performance:								Std; LTD	robustness
		empirical								and TD	checks.
		evidence from								negatively	
		automobile-								affect	
		listed firms.								RoA.	
										Std: LTD	
										and TD	
										negatively	
										affect	
										Tobin's O.	
Al-Nuaimat et	2020	The impact of	N/A	Jordan	В	Panel:	20 firms	N/A	MR	Firms with	The paper is
al.		debt maturity				Secondar				LTD have	highly related
		structure on firm				У				higher	to the
		performance:								profitabilit	application of
		evidence from								y and	the PRT.
		Jordan.								better	
										financial	
										performan	
										ce than	
										those with	
										Std.	

Ayuba <i>et al.</i>	2019	Effects of financial performance, capital structure and firm size on firms' value of insurance companies in Nigeria.	Journal of Finance, Accounting & Managemen t	Nigeria	В	Panel: Secondar y	27 firms	2012-2017	MR	Std, LTD and TD positively affect Tobin's Q.	The paper is highly related to the application of the PRT.
Pandey and Sahu	2019	Debt financing, agency cost and firm performance: Evidence from India.	Vision: The Journal of Business Perspective	India	A <sup>+</sup>	Panel: Secondar y	91 firms	2009- 2016	MR	DE negatively affect FP.	The paper is highly related to the application of the PRT.
Jones and Edwin	2019	Effect of debt financing on the corporate performance: A study of listed consumer goods firms in Nigeria.	Internationa l Journal of Academic Accounting, Finance and Managemen t Research (IJAAFMR)	Nigeria	В	Panel: Secondar y	15 firms	2006- 2017	MR	Std, LTD and TD negatively affect RoA.	The paper is highly related to the application of the PRT.

Aziz and Abbas	2019	Effect of debt	Open	Pakistan	В	Panel:	360	2006-	FEM;	Std	The paper is
		financing on	Journal of			Secondar	firms	2014	REM	negatively	highly related
		firm	Economics			У				affect RoA	to the
		performance: A	and							and GPM,	application of
		study on non-	Commerce							But it	the PRT.
		financial sector								positively	
		of Pakistan.								affects	
										EPS and	
										ROE.	
										LTD	
										negatively	
										affect	
										EPS, RoA,	
										and GPM;	
										but,	
										positively	
										affects	
										ROE. TD	
										negatively	
										affect	
										EPS, RoA,	
										and ROE;	
										but,	
										positively	
										affects	
										GPM.	

Chen et al.	2019	Debt Maturity	Internationa	Global	D	Global	7,328,80	2995-	MR	DA	The work is
		and the Use of	1 Monetary				0	2015		negatively	partially
		Short-Term	Fund.							affect	related to the
		Debt: Evidence								syndicated	study.
		from Sovereigns								loan	· ·
		and Firms.								maturity	
										2	
										at	
										issuance,	
										bond	
										maturity at	
										issuance	
										and Std	
										and Std.	
Le and O'Brien	2010	Can two wrongs	Journal of	China	$A^+$	Panel:	1300	2003-	FEM;	DE	The paper is
		make a right?	Managemen			Secondar	firms	2005	REM	negatively	highly related
		State ownership	t Studies			y				affect	to the
		and debt in a								ROE.	application of
		transition									the PRT.
		economy.									
		5									
Impact of the effe	ective ta	x rate on the debt-to	o-equity Ratio								
	2021			<u>C1</u> 1	D	D 1	5000	2014			<b>.</b>
Michalkova <i>et</i>	2021	Corporate	Marketing	Slovak;	В	Panel:	5000 	2014-	FEM;	Slovak:	The paper is
al.		management:	imenedžme	Czech		Secondar	firms	2017	REM	NDTS	highly related
		capital structure	ntinnovacij			У				negatively	to the
		and tax shields.								affect DE;	application of
										but, DTS	the PRT.
										positively	
					affect DE.						
--	--	--	--	--	------------	--					
					DTS						
					positively						
					affect						
					STDs;						
					and,						
					NDTS						
					negatively						
					affect						
					STDs.						
					DTS and						
					NDTS						
					negatively						
					affect						
					LID.						
					Czech:						
					NDTS and						
					DTS						
					negatively						
					affect DE.						
					DTS						
					nositively						
					offect						
					STDay						
					STDS;						
					and,						
					NDIS						

										negatively affect STDs. DTS and NDTS negatively affect LTD.	
Haidar and Mariana	2023	The effect of profitability and leverage on tax avoidance in manufacturing companies in the consumer goods industry sector listed on the Indonesian stock exchange in 2019-2021.	Jurnal Ekonomi	Indonesia n	В	Panel: Secondar y	25 firms	2019-2021	FEM; REM	RoA negatively affect ETR; DER positively affect ETR.	The paper is highly related to the application of the PRT.
Trianti	2021	Effect of capital structure, profitability, tax planning and dividend policy on the value of	Internationa l Journal of Economics, Business and Accounting	Indonesia n	В	Panel: Secondar y	27 firms	2016- 2020	MR	DER negatively affect PBV; ROE and ETR positively	The paper is highly related to the application of the PRT.

Rahnama and	2019	companies listed on the IDX.	Research (IJEBAR)	Iran	B	Panel.	94 firms	1988-	MR	affect PBV.	The paper is
Nahandi	2017	Effective Tax Rate on Capital Structure, Investment Decisions and Dividend Profit.	and Auditing Research		D	Secondar y		1993		negatively affect DER.	highly related to the application of the PRT.
Abdiansyah	2018	The Effect of Effective Tax Rate, Profitability and Debt to Past Liabilities.	Indonesian Journal of Business, Accounting and Managemen t	Indonesia n	В	Panel: Secondar y	21 firms	2010- 2016	FEM	CETR and PAST DEBT positively affect liability; and, RoA negatively affect liability.	The paper is highly related to the application of the PRT.
Devereux <i>et al</i> .	2018	Corporate tax incentives and capital structure: New evidence from UK firm- level tax returns.	Journal of Banking & Finance	United Kingdom	A <sup>+</sup>	Panel: Secondar y	16124 firms	2001-2009	GMM	MTR as a proxy for the corporate tax incentives positively	The paper is highly related to the application of the PRT.

										affects leverage.	
Impact of tax avo	Impact of tax avoidance on firm performance										
Shams <i>et al</i> .	2022	Does corporate tax avoidance promote managerial empire- building?	Journal of Contempora ry Accounting & Economics	The US.	A <sup>+</sup>	Panel: Secondar y	7190 firms	1991- 2015	MR	TA positively affect empire- building.	The paper is highly related to the application of the MR.
Abubakar <i>et al.</i>	2021	Corporate tax avoidance, free cash flow and real earnings management: Evidence from Nigeria.	Universal Journal of Accounting and Finance	Nigeria	В	Panel: Secondar y	72 firms	2014-2018	MR	ETR positively affect REM.	The paper is moderately related to the application of the MR.
Chukwudi <i>et al.</i>	2020	Effect of tax planning on firm value of quoted consumer goods manufacturing firms in Nigeria.	Internationa l Journal of Finance and Banking Research	Nigeria	В	Panel: Secondar y	21 firms	2009- 2018	OLS	ETR negatively affect Tobin's Q. ETR positively affect Tobin's Q.	The paper is highly related to the application of the OLS.

Kayode and Folajinmi	2020	Corporate tax planning and financial performance of quoted food and beverages firms in Nigeria.	Journal of Finance and Accounting	Nigeria	В	Panel: Secondar y	15 firms	2008- 2018	PRT	ETR negatively affect FP.	The paper is highly related to the application of the PRT.
Tanko	2020	The moderating effect of profitability on the relationship between ownership structure and corporate tax avoidance in Nigeria-listed consumer goods firms.	Internationa l Journal of Business and Technopren eurship	Nigeria	В	Panel: Secondar y	13 firms	2008-2018	GLS	MO and FO positively affect ETR; while IO negatively affects ETR.	The paper is moderately related to the study variables.
Olarewaju and Olayiwola	2019	Corporate tax planning and financial performance in Nigerian non- financial quoted companies.	African Developme nt Review	Nigeria	A <sup>+</sup>	Panel: Secondar y	47 firms	2007-2016	VAR	TA negatively affect RoA.	The paper is moderately related to the study variables.

Olatunji and Oluwatoyin	2019	Effect of corporate taxation on the profitability of firms in Nigeria.	Journal of economics and behavioural studies	Nigeria	В	Panel: Secondar y	N/A	2007-2016	OLS	CT, VAT, WHT and EDT positively affect PAT.	The paper is moderately related to the study variables.
Adegbite and Bojuwon	2019	Corporate tax avoidance practices: empirical evidence from Nigerian firms.	Studia Universitati s Babes- Bolyai Oeconomic a	Nigeria	В	Panel: Secondar y	20 firms	2006- 2017	MR	TC and transfer pricing are significant ly related toTA.	The paper is moderately related to the study variables.
Fagbemi <i>et al</i> .	2019	The corporate tax planning and financial performance of systemically important banks in Nigeria.	Ekonomski horizontal	Nigeria	В	Panel: Secondar y	8 firms	2006-2017	OLS	ETR negatively affect ROE; TC positively affect ROE.	The paper is highly related to the study variables.
Onyali and Okafor	2018	Effect of corporate governance mechanisms on tax aggressiveness of quoted manufacturing	Asian Journal of Economics, Business and Accounting	Nigeria	В	Panel: Secondar y	44 firms	2005-2016	OLS	Board size negatively affects ETR; while board diversity, independe	The paper is moderately related to the application of the OLS.

		firms on the Nigerian Stock Exchange.								nce and non- executive directors positively affect ETR.	
Igbinovia and Ekwueme	2018	Corporate tax avoidance and shareholders return Moderating effects of monitoring.	Sriwijaya Internationa I Journal of Dynamic Economics and Business	Nigeria	В	Panel: Secondar y	54 firms	2010- 2016	OLS	TA positively affect shareholde rs' returns.	The paper is moderately related to the application of the OLS.
Li et al.	2018	Managerial ownership and firm performance: Evidence from the 2003 Tax Cut.	Available at SSRN	The US.	В	Panel: Secondar y	7 firms	2007- 2016	MR	ETR positively affect firm growth.	The paper is moderately related to the application of the OLS.
Ifurueze <i>et al</i> .	2018	Effect of corporate tax aggressiveness on firm growth in Nigeria: An	Internationa l Journal of Trend in Scientific Research and	Nigeria	В	Panel: Secondar y	3656 firms	2000- 2005	OLS; FEM	MO negatively affect Tobin's Q.	The paper is moderately related to the application of the OLS.

	empirical	Developme				
	analysis.	nt (IJTSRD)				

Key: Std-Short-term debt; LTD-Long-term debt; TD-Total debt; DE-Debt-to-equity; DA-Debt-to-asset; EA-Total equity to assets; DMC-Debtto-market capitalisation; MV-Market value; DC-Debt to capital employed; DCE-Debt to common equity; MR-Multiple regression; PRT-Panel regression technique; NDTS-Non-debt tax shield; DTS-Debt tax shield; REM-Real earnings management; TC-Thin capitalisation.

# **Ranking:**

A<sup>+</sup>-Scopus

**B-Google Scholar** 

C-Thesis/Dissertation

**D**-International Organisation

# 2.11 Summary.

This chapter has provided a comprehensive review of the literature about the impact of capital structure decisions and corporate tax strategies on the financial performance of publicly traded firms. By systematically examining key concepts, theories, and empirical evidence, the chapter has laid a solid foundation for this doctoral study's investigation of these complex interrelationships within the context of the Nigerian manufacturing sector.

The conceptual review elucidated the pivotal role of capital structure, emphasising the significance of the debt-to-equity ratio as a manifestation of financing choices. It further highlighted the importance of considering industry specificities, firm characteristics, and the optimal balance between debt and equity in shaping organisational outcomes. The review also delved into the concept of tax avoidance, its various manifestations, and its potential implications for firm performance.

The theoretical review rigorously appraised dominant frameworks, including the pecking order theory, trade-off theory, agency cost theory, and market timing theory. By synthesising their insights and limitations, the chapter has provided a comprehensive and nuanced understanding of the mechanisms driving the capital structure and firm performance nexus, underlining the need for context-specific investigations.

The empirical review scrutinised prior studies, revealing mixed findings on the relationships between debt-to-equity ratio, effective tax rate, and various performance metrics. This inconsistency underscores the importance of the current study in addressing research gaps and providing fresh evidence from the Nigerian manufacturing landscape.

Building upon the comprehensive literature review, the chapter culminated in developing a robust conceptual framework and formulating testable hypotheses. This sets the stage for the ensuing methodological design and empirical analysis, poised to generate actionable insights for policymakers, investors, and corporate managers in the Nigerian manufacturing sector. These insights can potentially optimise financing decisions and tax strategies, enhancing firm performance and competitiveness.

#### **Chapter 3: Methodology.**

#### **3.1 Introduction.**

3.1.1 Research Philosophy and Approach.

The study follows a positivist approach and adopts the quantitative research design as the study solely relies on panel data obtained from annual financial statements of manufacturing firms quoted on the Nigerian Stock Exchange (NSE). The researcher utilised deductive reasoning and formulated the research hypotheses from an in-depth understanding of the research problem before the data collection and before subjecting the data to a detailed analysis by using statistical techniques and conclusions drawn from the findings to prove or refute each hypothesis.

#### 3.2 Research design.

The study follows a quantitative approach and relies on secondary panel data from annual reports of the sampled firms. Thus, the focus of quantitative research design is the numerical measurement of the studied variables (Gay, Mills, &Airasian, 2009). This approach has been utilised in prior studies by Jaffar, Derashid, and Taha (2021) in Malaysia; Legowo, Florentina, and Firmansyah (2021) in Indonesia; and Abdullahi *et al.* (2023) and Kenn-Ndubuisi, Ifechi, and Nweke (2019) in Nigeria. The main types of quantitative research designs are Descriptive, Survey, Experimental, Correlational, and Causal-Comparative (also called Quasi-Experimental). This study utilises the Causal-comparative research design also referred to as Ex-post facto research design.

#### 3.3 Sample size description.

The study focuses on non-financial companies quoted on the NSE.

S/No	Sector	No. of
		firms
1	Conglomerates	4
2	Agriculture	3
3	ICT	6
4	Construction	5
4	Health Care	7
5	Consumer Goods	10
6	Industrial Goods	11
7	Oil & Gas	8
8	Others (e.g., Printing Press, Leasing, Hotel & Fast food, Mining &	9
	Exploration)	
9	Natural resources	3
	Total	66

 Table 3: Sector classification of companies included in the final sample.

Source: The Nigerian Stock Exchange Website (2021)

Table 4: Firms excluded	from the sample.
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S/No	Sector	No. of firms
1	Financial Services	52
2	Services	25
0		

Source: The Nigerian Stock Exchange Website (2021)

The final sample utilised in the study comprised 66 companies and non-financial firms quoted on the NSE collected by the researcher. The choice of eliminating or excluding financial services companies such as insurance companies and banks is consistent with the approach utilised in prior studies because they are subject to regulatory differences (M'nget et *al.*, 2017; Rajan& Zingales, 1995).

# 3.4 Sources of Data.

The study relied on secondary data and specifically focused on panel data obtained from annual financial reports of non-financial companies quoted on the NSE from 2011 to 2020. The panel longitudinal data has both cross-sectional and time series properties. The choice of panel data is premised on the fact that the study examines the effect of firm-specific capital structure, tax avoidance and firm performance variables over some time. As stated by Singh (2016), the choice of panel data has proven efficacious in empirical finance and corporate governance literature. Panel data are more robust in firm-specific studies than time-series or cross-sectional studies because of the increased number of observations from pooling samples and the advantage of increased degrees of freedom (Sun &Parikh, 2001).

#### 3.5 Research procedure.

This study focused on investigating the relationship between the DER as a type of capital structure or firm's financing options and the firm's financial performance among non-financial companies quoted on the NSE. The interest of the study is to establish the predictive effects of DER on selected key financial performance parameters. The selected financial performance parameters of interest have been hypothesised as return on assets (RoA), earnings-per-share (EPS), Tobin's Q, EBIT, and earnings before interest and tax, depreciation and amortisation (EBITDA). The study is also interested in exploring the moderating effects of tax avoidance, focusing on the ETR. The research procedure for testing the proposed hypotheses was primarily procedural, focusing on data gathering, data management, design testing, analysis, and reporting of the result in order to increase the empiricism of the result and its applicability.

In the data gathering, data from the financial statements of 66 non-financial companies, excluding 52 Financial Services and 25 service firms, were culled from the annual financial reports published by the Nigerian Stock Exchange Commission during the 10-year duration being investigated by the study (2011-2020). The distribution of the 66 firms was across conglomerates (3), agriculture (5), ICT (6), construction (5), healthcare (7), consumer goods (10), industrial goods (11), oil and gas (8), natural resources (3) and others (9). The parameter for choosing a firm in any of the categories was based on firms that have a reported column for

all the indices in the study framework, which included DER, ETR, RoA, EPS, Tobin's Q, EBIT, and EBITDA.

To select the firms the first 66 firms which met the criteria across all the financial sectors were selected. The firms selected were public liability companies; this is to ensure that the equity method of financing was by default while the debt method of financing was at the discrepancy of the firms. Also, firms selected from the commission's list of annual financial reports are firms that have neither declared bankruptcy nor are they undergoing probation or suspension from the commission. This is to ensure that generalised errors due to bias was eliminated and also to ensure that firms selected with the duration are active firms with evidence of current financial activities.

In data handling, columns with missing values were used while the next complete column on the list was picked to replace them. Each column to be extracted was labelled with the variable's name for easier coding and analysis identification. The complete columns were extracted and transferred to an Excel spreadsheet from where they were coded for usage in the statistical analytical tool. The statistical data extracted from the quoted companies listed in the NSE was transferred to the Eviews statistical platform to apply multiple linear regression analysis. In the analysis, the predictor effects of the independent variable (predictor) DER were regressed against each of the selected parameters of the financial performance as the dependent variable, namely, RoA, EPS, Tobin's Q, EBIT and EBITDA.

The first line of analysis was panel regression which ascertained if the predictor DER has significant predictive effects on each of the financial performance parameters in focus. Also, the direction of this predictive relationship (positive or negative). Finding each of the financial performance parameters gives insights into the nature of the effects of DER capital structure on a firm's financial performance, which will inform which DER mix was critical of certain performance indices. The insights garnered from the findings were utilised to establish

the peculiarities of the efficacy of each DER financing mix, especially within the context of the non-financial sector. The statistical analysis produces five baseline model outputs from the statistical analysis:

i. DER-RoA (predictive effects of Debt-to-Equity on Return on Assets)

- ii. DER-EPS (predictive effects of Debt-to-Equity on Earnings per-Share)
- iii. DER-Tobin's Q (predictive effects of Debt-to-Equity on Tobin's Q)
- iv. DER-EBIT (predictive effects of Debt-to-Equity on Earnings before Interest and Tax)
- v. EBIT-EBITDA (predictive effects of Earnings before Interest on Earnings before Interest, Tax, Depreciation and Amortisation).

After the statistical results obtained from the models testing the predictive effects of DER on each of the selected performance parameters (RoA, EPS, Tobin's Q, EBIT and EBITDA) and the moderation impacts of ETR in the relationship between DER and each of the selected performance criteria – RoA, EPS, Tobin's Q, EBIT and EBITDA. The results were analysed based on whether there are significant and positive/negative predictive impacts of the predictor variable (DER) on the selected parameters of the criterion variable firm performance (RoA, EPS, Tobin's Q, EBIT and EBITDA).

The second part of the analysis checked the influence of term structure of debt on ETR and firm performance; and the effect of ETR on DER and firm performance. The third part of the analysis checked the statistical output which supports the moderation model of the study, which hypothesised that ETR would moderate the relationship between the predictor – DER and the selected performance parameters (RoA, EPS, Tobin's Q, EBIT and EBITDA) as the dependent variables.

At the end of statistical analyses, the results from the model outputs were interpreted to answer the research questions of the study and confirm the hypothetical statements. The findings were discussed along with the implications of the study and the limitations, especially regarding the model specifications. The discussion of the findings will be concluded with recommendations and implications for further research.

# 3.6 Model specification.

The performance proxies utilised in the study: RoA, EPS, Tobin's Q, EBIT and EBITDA, were regressed on total debt-to-equity (DER), in addition to the inclusion of firm-specific control variables that affect firm performance as identified from prior literature (Wang *et al.*, 2020) as follows:

ROA = f(debt-to-equity, firm size, age, sales growth, the board size, market-to-book) EPS = f(debt-to-equity, firm size, age, sales growth, the board size, market-to-book) TobQ = f(debt-to-equity, firm size, age, sales growth, the board size, market-to-book) EBIT = f(debt-to-equity, firm size, age, sales growth, the board size, market-to-book) EBITDA = f(debt-to-equity, firm size, age, sales growth, the board size, market-to-book)

The 'static linear models' of the above expression are presented in the equations below as follows:

ROAit =	$\alpha_0 + \beta_1 DER \ it + \beta_2 FS \ it + \beta_3 Age + \beta_4 SG + \beta_5 BS + \beta_6 MTB + \mu_i$	Eq. (1)
EPS it =	$\alpha_0 + \lambda_1 DER \; it + \lambda_2 FS \; it + \lambda_3 Age + \lambda_4 SG + \lambda_5 BS + \lambda_6 MTB + \mu_i$	Eq. (2)
TobQ it =	$\alpha_0 + \eta_1 DER \; it + \eta_2 FS \; it + \eta_3 Age + \eta_4 SG + \eta_5 BS + \eta_6 MTB + \mu_i$	Eq. (3)
EBIT it =	$\alpha_0 + \gamma_1 DER \ it + \gamma_2 FS \ it + \gamma_3 Age + \gamma_4 SG + \gamma_5 BS + \gamma_6 MTB + \mu_i$	Eq. (4)
EBITDA it =	$\alpha_0 + \omega_1 DER \ it + \omega_2 FS \ it + \omega_3 Age + \omega_4 SG + \omega_5 BS + \omega_6 MTB + \mu_i$	Eq. (5)

Where: ROA, EPS (Earnings per Share), TobQ (Tobin's Q), EBIT (Earnings before Interest and Taxes), EBITDA (Earnings before Interest, Taxes, Depreciation and Amortisation), DER (Debt-to-Equity), FS, Age (Firm Age), SG, BS (Board Size), MTB (Market-to-Book).

The above multivariate regressions represent an improvement over for instance the model employed by Salim and Yadav (2012).

DER = f (term structure of debt, firm size, age, sales growth, the board size, market-to-book) TobQ = f (term structure of debt, firm size, age, sales growth, the board size, market-to-book) DER = f (effective tax rate, firm size, age, sales growth, the board size, market-to-book) TobQ = f (effective tax rate, firm size, age, sales growth, the board size, market-to-book)

The 'static linear models' of the above expression are presented in the equations below as follows:

 $\begin{aligned} \text{DERit} &= \alpha_0 + \beta_1 \text{TSD it} + \beta_2 \text{FS it} + \beta_3 \text{Age} + \beta_4 \text{SG} + \beta_5 \text{BS} + \beta_6 \text{MTB} + \mu_i & \dots \text{Eq. (6)} \\ \text{TobQit} &= \alpha_0 + \lambda_1 \text{TSD it} + \lambda_2 \text{FS it} + \lambda_3 \text{Age} + \lambda_4 \text{SG} + \lambda_5 \text{BS} + \lambda_6 \text{MTB} + \mu_i & \dots \text{Eq. (7)} \\ \text{DERit} &= \alpha_0 + \beta_1 \text{ETR it} + \beta_2 \text{FS it} + \beta_3 \text{Age} + \beta_4 \text{SG} + \beta_5 \text{BS} + \beta_6 \text{MTB} + \mu_i & \dots \text{Eq. (8)} \\ \text{TobQit} &= \alpha_0 + \lambda_1 \text{ETR it} + \lambda_2 \text{FS it} + \lambda_3 \text{Age} + \lambda_4 \text{SG} + \lambda_5 \text{BS} + \lambda_6 \text{MTB} + \mu_i & \dots \text{Eq. (9)} \end{aligned}$ 

Where: TSD (Term Structure of Debt), ETR.

The above multivariate regressions represent an improvement over for instance the model employed by Salim and Yadav (2012).

#### 3.6.1 Moderation Regression.

In the second line of analysis, the statistical design tested the efficacy of the ETR in moderating the predictive relationship between DER and the selected financial performance parameters. To do this successfully, the moderating effects of ETR will be ascertained by adding the moderating variable (ETR) into each of the regression models testing the predictive effects of DER on the dependent variable – selected financial parameters RoA, EPS, Tobin's Q, EBIT and EBITDA. Also, the statistical analysis produced, five baseline model outputs:

 DER-ETR-RoA (moderating impacts of Effective Tax Rate on the relationship between Debt-to-Equity and Return on Assets)

- DER-ETR-EPS (moderating impacts of Effective Tax Rate on the relationship between Debt-to-Equity and Earnings per-Share)
- iii. DER-ETR-Tobin's Q (moderating impacts of Effective Tax Rate on the relationship between Debt-to-Equity and Tobin's Q)
- iv. DER-ETR-EBIT (moderating impacts of Effective Tax Rate on the relationship between Debt-to-Equity and Earnings before Interest and Tax)
- v. EBIT-ETR-EBITDA (moderating impacts of Effective Tax Rate on the relationship between Earnings before Interest and Tax and Earnings before Interest, Tax, Depreciation and Amortisation).

The MRA is a form of multiple regressions, which inculcates a moderator variable in the system of equations. According to Ngatno, Apriatni, and Youlianto (2021), the MRA is useful for testing the moderating effect. The following multivariate regression equations are utilised to test hypotheses ten, eleven, twelve, thirteen and fourteen. The proxy for corporate tax avoidance the Effective Tax Rate was included in all five models.

 $\begin{aligned} \text{ROAit} &= \alpha_0 + \beta_1 \text{DER it} + \beta_2 \text{ETR it} + \beta_3 \text{DER it}^* \text{ETR it} + \beta_4 \text{FS it} + \beta_5 \text{Age} + \beta_6 \text{SG} + \beta_7 \text{BS} + \\ & \beta_8 \text{MTB} + \mu_i \quad \dots \text{Eq. (10)} \end{aligned}$ 

- $$\begin{split} EPSit &= \alpha_0 + \lambda_1 DER \ it + \lambda_2 ETR \ it + \lambda_3 DER \ it *ETR \ it + \lambda_4 FS \ it + \lambda_5 Age + \lambda_6 SG + \lambda_7 BS + \\ \lambda_8 MTB + \mu_i \qquad \dots Eq. \ (11) \end{split}$$
- $\begin{array}{l} TobQit = \alpha_0 + \eta_1 DER \ it + \eta_2 ETR \ it + \eta_3 DER \ it *ETR \ it + \eta_4 FS \ it + \eta_5 Age + \eta_6 SG + \eta_7 BS + \\ \eta_8 MTB + \mu_i \qquad \dots Eq. \ (12) \end{array}$
- $$\begin{split} EBITit &= \alpha_0 + \gamma_1 DER \ it + \gamma_2 ETR \ it + \gamma_3 DER \ it *ETR \ it + \gamma_4 FS \ it + \gamma_5 Age + \gamma_6 SG + \gamma_7 BS + \\ & \gamma_8 MTB + \mu_i \quad \dots Eq. \ (13) \end{split}$$
- $\begin{aligned} \text{EBITDAit} &= \alpha_0 + \omega_1 \text{DER it} + \omega_2 \text{ETR it} + \omega_3 \text{DER it}^* \text{ETR it} + \omega_4 \text{FS it} + \omega_5 \text{Age} + \omega_6 \text{SG} + \omega_7 \text{BS} \\ &+ \omega_8 \text{MTB} + \mu_i \quad \dots \text{Eq. (14)} \end{aligned}$

Where.

 $\beta_{1} - \beta_{8}$  = the regression coefficients in the explanatory variables

$\lambda_1$ - $\lambda_8$	=the regression coefficients in the explanatory variables
$\eta_1$ - $\eta_8$	=the regression coefficients in the explanatory variables
<b>γ</b> 1 <b>-γ</b> 8	=the regression coefficients in the explanatory variables
<b>ω</b> 1 <b>-ω</b> 8	=the regression coefficients in the explanatory variables
it	= i for firm; t for time
α0	= constant
*	= interaction term

 $\mu_i = Error term$ 

# 3.6.2 Robustness check.

The following models were employed within the GMM estimation as a robustness check of the previous models.

ROAit =	$\alpha_0 + \beta_1 ROAit-1 + \beta_2 DER it + \beta_3 FS it + \beta_4 Age + \beta_5 SG + \beta_6 BS + \beta_7 MTB + \mu_i$ Eq. (1)
EPS it =	$\alpha_0 + \lambda_1 EPSit-1 + \lambda_2 DER it + \lambda_3 FS it + \lambda_4 Age + \lambda_5 SG + \lambda_6 BS + \lambda_7 MTB + \mu_i$ Eq. (2)
TobQ it =	$\label{eq:alpha} \begin{split} \alpha_0 + \eta_1 TobQit\text{-}1 + \eta_2 DER ~it + \eta_3 FS ~it + \eta_4 Age + \eta_5 SG + \eta_6 BS + \eta_7 MTB + \mu_i \\ \dots Eq.~(3) \end{split}$
EBIT it = Eq.	$\alpha_0 + \gamma_1 EBITit-1 + \gamma_2 DER it + \gamma_3 FS it + \gamma_4 Age + \gamma_5 SG + \gamma_6 BS + \gamma_7 MTB + \mu_i$ (4)
EBITDA it =	$\alpha_0 + \omega_1 EBITDAit-1 + \omega_2 DER it + \omega_3 FS it + \omega_4 Age + \omega_5 SG + \omega_6 BS + \omega_7 MTB + \mu_i \qquad \dots Eq. (5)$
DERit = $\alpha_0$ +	$\beta_1$ DERit-1 + $\beta_2$ TSD it + $\beta_3$ FS it + $\beta_4$ Age + $\beta_5$ SG + $\beta_6$ BS+ $\beta_7$ MTB + $\mu_i$ Eq. (6)

TobQit = $\alpha_0 + \lambda_1$ TobQit-1 + $\lambda_2$ TSD it + $\lambda_3$ FS it + $\lambda_4$ Age + $\lambda_5$ SG + $\lambda_6$ BS+ $\lambda_7$ MTB + $\mu_i$ Eq. (7)	
$DERit = \alpha_0 + \beta_1 DERit-1 + \beta_2 ETR it + \beta_3 FS it + \beta_4 Age + \beta_5 SG + \beta_6 BS + \beta_7 MTB + \mu_i$ Eq. (8)	
$TobQit = \alpha_0 + \lambda_1 TobQit-1 + \lambda_2 ETR it + \lambda_3 FS it + \lambda_4 Age + \lambda_5 SG + \lambda_6 BS + \lambda_7 MTB + \mu_i$ Eq. (9)	

- $\begin{aligned} \text{ROAit} &= \alpha_0 + \beta_1 \text{ROAit-1} + \beta_2 \text{DER it} + \beta_3 \text{ETR it} + \beta_4 \text{DER it}^* \text{ETR it} + \beta_5 \text{FS it} + \beta_6 \text{Age} + \beta_7 \text{SG} \\ &+ \beta_8 \text{BS} + \beta_9 \text{MTB} + \mu_i \quad \dots \text{Eq. (10)} \end{aligned}$
- $$\begin{split} EPSit &= \alpha_0 + \lambda_1 EPSit 1 + \lambda_2 DER \ it + \lambda_3 ETR \ it + \lambda_4 DER \ it *ETR \ it + \lambda_5 FS \ it + \lambda_6 Age + \lambda_7 SG \\ &+ \lambda_8 BS + \lambda_9 MTB + \mu_i \ \dots Eq. \ (11) \end{split}$$
- $\begin{array}{l} TobQit = \alpha_0 + \eta_1 TobQ \ it 1 + \eta_2 DER \ it + \eta_3 ETR \ it + \eta_4 DER \ it * ETR \ it + \eta_5 FS \ it + \eta_6 Age + \\ \eta_7 SG + \eta_8 BS + \eta_9 MTB + \mu_i \quad \dots Eq. \ (12) \end{array}$
- $$\begin{split} EBITit &= \alpha_0 + \gamma_1 EBITit 1 + \gamma_2 DER \text{ it } + \gamma_3 ETR \text{ it } + \gamma_4 DER \text{ it}^* ETR \text{ it } + \gamma_5 FS \text{ it } + \gamma_6 Age + \gamma_7 SG \\ &+ \gamma_8 BS + \gamma_9 MTB + \mu_i \dots Eq. \ (13) \end{split}$$
- $$\begin{split} EBITDAit &= \alpha_0 + \omega_1 EBITDAit 1 + \omega_2 DER \ it + \omega_3 ETR \ it + \omega_4 DER \ it * ETR \ it + \omega_5 FS \ it + \omega_6 Age + \omega_7 SG + \omega_8 BS + \omega_9 MTB + \mu_i \qquad \dots Eq. \ (14) \end{split}$$

#### 3.6.3 Model Validation and Hypotheses Testing.

The panel data regression techniques used to examine the degree of the relationship amongst the variables include the pooled OLS, FEM and REM while controlling for other influential variables (Abdullah &Tursoy, 2019; Chadha & Sharma, 2015; Dawar, 2014; Vo & Ellis, 2017). However, to tackle the issue of endogeneity the study also employed the Generalised Methods of Moments (GMM) regression technique (Roberts & Whited, 2013). The overall statistical significance of the models is checked with the F-statistics and the associated p-values of the estimated coefficients (*t*-statistics) are used to support or refute each hypothesis. The decision criterion is based on an alpha ( $\alpha$ ) level of .05; thus, accept the null hypothesis if  $\alpha > .05$  otherwise reject it.

# **3.7 Description of variables**.

Variable	Acronym	Measurement	Source	Database		
Independent var	riables		1			
Debt-to-Equity	DE	Total Liabilities divided by Total Equity	Khuong <i>et al.</i> (2020)	MachameRATIOS®		
Long-term Debt-to-Equity	LDE	Non-current Liabilities divided by Total Equity	Khuong <i>et al.</i> (2020)	MachameRATIOS®		
Short-term Debt-to-Equity	SDE	Current Liabilities divided by total equity	Khuong <i>et al.</i> (2020)	MachameRATIOS®		
Control variable	S		·			
Firm Size	FS	The log of total assets in thousands is computed as the natural logarithm of Total assets.	Khuongetal.(2020);MardonesandCuneo(2020),Shubita&Alsawalhah(2012)	MachameRATIOS®		
Firm Age	Age	Companies listing age in numbers is the difference amongst current years minus the year of listing in the stock exchange + 1	Adair &Adaskou (2015)	MachameRATIOS®		
Sales Growth	SG	Revenue growth in percentage is calculated as current year revenue minus previous year revenue divided by previous revenue	Abdullah &Tursoy (2019); Kodongo <i>et al.</i> (2015); Khuong <i>et al.</i> (2020); Shubita&Alsawalhah (2012)	<ul> <li>MachameRATIOS®</li> <li>.</li> </ul>		
Board Size	BS	Board Size in numbers is computed as the total number of all directors of a company (including the Chairman vice Chairman +CEO/Managing	Isik& Ince (2016); Mollah <i>et al.</i> (2012); Tulung&Ramdani (2018)	MachameRATIOS®		

# Table 5: Variables included in the models.

Market-to-	MTB	director + Executive Directors +Non- Executive Directors or Independent Directors but excluding the company secretary) The market value of	Dang & Tran (2021)	MachameRATIOS®
Book		shareholder equity/book value of shareholder		
Moderating vari	able			
Effective Tax Rate	ETR	This is calculated by dividing cash taxes paid by total pre-taxable Income. The cash ETR shows the rate of tax paid per naira of income earned.	Chen <i>et al.</i> (2010); Chen <i>et al.</i> (2012); Cheng <i>et al.</i> (2012); Dyreng <i>et al.</i> (2010); Khuong <i>et al.</i> (2020); Zhang <i>et al.</i> (2017)	MachameRATIOS®
Dependent varia	bles			
Return on Assets	RoA	This is computed as profit after tax divided by total asset	Adair &Adaskou (2015); Desai & Dharmapala (2009);Khuong <i>et al.</i> (2020); Yu (2013)	MachameRATIOS®
Earnings per- Share	EPS	Measured as net profit after tax divided by the number of ordinary shares,	Olorunfemi& David (2010)	MachameRATIOS®
Firm Valuation	TobQ	Market Capitalisation + Total Liabilities -Cash flow divided by Total asset [alternatively, Tobin's Q is measured as the ratio of the market value of total assets and total debt to book value of total assets.]	Chen <i>et al.</i> (2014); Desai & Dharmapala (2009);Khuong <i>et al.</i> (2020); Yu (2013); Zhang <i>et al.</i> (2017)	MachameRATIOS®

Earnings before Interest, Taxes	EBIT	This is computed as Earnings before Interest and taxes divided by revenue or sales.	Singh (2016)	MachameRATIOS®
Earnings before Interest, Taxes, Depreciation and Amortisation	EBITDA	This is computed as Earnings before Interest, Taxes, Depreciation and Amortisation divided by revenue or sales.	Singh (2016)	MachameRATIOS®

Source: Author's Compilation from reviewed literature (2021).

#### **3.7.1 Control variables.**

Prior studies have utilised the following control variables in the studies (Ngatno, Apriatni, &Youlianto, 2021):

- Firm Size: The size of a firm plays a crucial role in determining firm performance and is also subject to public scrutiny. The latter reason becoming an obvious reason for engaging in corporate tax avoidance. The current study postulates a positive relationship between firm size and dependent variable; this is somewhat consistent with the apriori expectation in Singh (2016) of a positive nexus consistent with the trade-off theory. Secondly, from a "political power perspective" (Siegfried, 1972), arguably large firms have at their disposal more economic resources which can ultimately enable them to influence the political processes in their favour (Richardson &Lanis, 2007). The study by Poli (2019) using empirical data from Italy found a negative relationship between ETR and firm size.
- 2. Firm Age: The age of a firm has been utilised in prior studies. For instance, using empirical data from Nigeria Yemi and Seriki (2018) found a positive significant effect of firm age on Tobin's Q; the results were also positive using the market-to-book ratio as the dependent variable. However, in the latter case, this was not significant. The variable of firm age was also utilised in the study by Dawar (2014), using empirical data from Indian manufacturing firms from 2003 to 2012.
- 3. Sales Growth: The variable sales growth has also been utilised in prior studies, e.g., Abdullah and Tursoy (2019). Using empirical data from more than 2000 observations in Germany, the study by Abdullah and Tursoy (2019) found a positive significant effect of sales growth on RoA and ROE, while the effect on the stock prices (Δ) was negative and significant. Empirically, analysing a sample of 305 Taiwanese firms the study conducted by Chen and Chen (2011) found a positive effect of sales growth on capital structure.

4. Board Size: Board size is a significant corporate governance mechanism; and prior studies have found support for large or small boards across several contexts. For instance, Ganiyu and Abiodun (2012); and Nandi and Ghosh (2012) found a positive relationship. As suggested byNgatno, Apriatni, and Youlianto (2021), large boards are more effective monitors of corporate board decision-making processes because of the varied experiences they bring to the board. These may be a reason for improved and sustained firm performance in the long run.

Market-to-Book: The market-to-book ratio has also been utilised in prior studies. These include studies by Kyereboah-Coleman and Biekpe (2006); and Yemi and Seriki (2018). Using empirical data from 75 non-financial firms the study by Yemi and Seriki (2018) found a negative relationship between leverage and market-to-book ratio for the period 2003 to 2014.

#### 3.8 Summary

This chapter has delineated the methodological framework underpinning the doctoral study, which seeks to investigate the impact of capital structure decisions and corporate tax strategies on the financial performance of publicly traded firms in Nigeria. By adopting a positivist approach and employing a quantitative research design, the study adheres to the tenets of empiricism and ensures the reliability and generalisability of its findings.

The research procedure detailed in this chapter encompasses the meticulous and systematic collection of secondary panel data from the annual financial reports of 66 non-financial companies listed on the Nigerian Stock Exchange from 2011 to 2020. The rigorous data management and analysis techniques, including the application of multiple linear regression analysis and panel data methods, underscore the study's unwavering commitment to methodological rigour, instilling confidence in the validity of the study's findings.

The model specification section elucidates the static linear models and moderation regression equations, which serve as the backbone of the empirical investigation. By incorporating a comprehensive set of explanatory variables, including the debt-to-equity ratio, effective tax rate, and various firm-specific control variables, the models are well-equipped to capture the complex interrelationships among capital structure, tax avoidance, and firm performance.

The robustness checks, utilising the Generalised Methods of Moments (GMM) estimation, further enhance the study's credibility by addressing potential endogeneity issues. The meticulous description of variables and the inclusion of pertinent control variables, a testament to the researcher's attention to detail and adherence to established corporate finance and accounting literature practices, provide assurance of the study's credibility and reliability.

In conclusion, this chapter has laid out a robust methodological roadmap for this doctoral study, ensuring that the ensuing empirical analysis is grounded in sound research principles and poised to generate reliable and actionable insights for policymakers, investors, and corporate managers in Nigeria and beyond. In the next chapter, the data presentation and analysis would be outlined and explained thoroughly.

#### **Chapter 4: Data Presentation and Analysis.**

#### 4.0 Introduction to Results.

This chapter presents the statistical output from the analysed data from the non-financial sector of companies listed on the floor of the NSE. The nature of the data focused on the capital structure parameters, the performance parameters, the tax parameters and the internal value of the firms measured as Tobin's Q. Thus, for the analysis, data extracted were from 66 firms of nine non-finance sectors accounting for 10 years from 2011 to 2020. The focused parameters were Tobin's Q (TQ), RoA, Debt-to-Equity Ratio (D/E Ratio), ETR, EBIT and Earnings Before Interest, Tax, Depreciation and Amortisation (EBITDA). To analyse these data, a regression statistical tool was adopted where a linear model was deployed. Also, to test the moderating effects of the interest variables, the general linear model was deployed where model fit comparison was made to ascertain if the moderating variable significantly affected the model.

### 4.1 Results

		Tobin's Q	Debt/Equity Ratio	Return on Assets	EBITDA	ETR	EBI
							Т
Tobin's Q	Pearson's r	—					
	p-value	—					
Debt/equity ratio	Pearson's r	0.131 ***					
	p-value	<.001					
Return on Assets	Pearson's r	0.140 ***	0.707 ***				
	p-value	<.001	< .001	—			
EBITDA	Pearson's r	-0.019	-0.065	0.275 ***	_		
	p-value	0.602	0.074	< .001	_		
ETR	Pearson's r	-0.030	-0.139 ***	-0.117 **	0.003		
	p-value	0.413	<.001	0.001	0.924		
EBIT	Pearson's r	0.097 **	0.423 ***	0.616 ***	0.240 ***	-0.057	
	p-value	0.008	< .001	<.001	<.001	0.122	

Table 6: Regression correlation matrix among variables in the model

*Note.* \* p < .05, \*\* p < .01, \*\*\* p < .001

Table 6 shows data from 66 firms extracted from performance indicators of nine non-finance sectors accounting for 10 years from 2011 to 2020 were analysed. The correlation matrix indicated that most performance indicators of interest had a significant relationship with the predictor variables. DER has a significant correlation with Tobin's Q (TQ) at 0.13, p < .001; other flagged correlations include: TQ and EBIT = .10, p < .05; DER and Return on assets (RoA) = .71, p < .001; DER and ETR = -.14, p < .001; DER and EBIT = .42, p < .001; RoA and Earnings before interest, tax, depreciation and amortisation (EBITDA) = .28, p < .001; RoA and ETR = -18, p < .05; RoA and EBIT = .62, p < .001; and finally EBITDA and EBIT = .24, p < .001.

Table 7: Effect of DER on Return on Assets (RoA), Tobin's Q (TQ) and EBIT.

Predictor – DER									
			95% Confid	lence					
			Interval		_				
Model Coefficients	Estimate	SE	Lower	Upper	t	$A.R^2$	F	Р	
Intercept	2.21	0.4403	1.35	3.08	5.02			<.001	
						0.499	747		
Return on Assets (R	oA) 2.09	0.0763	1.94	2.24	27.34			<.001	
Intercept	1.522	0.0492	1.426	1.618	30.9			<.001	
					7	0.016	13		
Tobin's O (TO)	0.031	0.009	0.014	0.047	3.60			< .001	
	0.001	0.009	0.011	0.017	5.00				
Intercept	5.59	0.977	0.603	1.024	5.72			<.001	
						0.178	163		
EBIT	2.16	0.169	0.142	0.198	12.78			< .001	

# 4.2 Effect of DER on Return on Assets (RoA).

Table 7 shows the predictive effects of the DER on return on assets (RoA). To test this predictive effect, data from 66 firms extracted from performance indicators of nine non-finance sectors

accounting for 10 years from 2011 to 2020 were analysed and the predictor additively explained 49.9% variance (given the adjusted  $R^2$  at F = 747) of debt-to-equity ratio as evidence on  $R^2 = .50$  and Adj.  $R^2 = .499$  which represents a statistically significant effect at F(2, 748) = 2.1, p < .001 with lower and upper limits at 1.9 and 2.2 respectively. From the result, the statistical output is a strong indication that the ratio of debt-to-equity financing in the capital structure of the evaluated firms positively and significantly affected the firms' return on assets as statistically demonstrated. Thus, the alternative hypothesis proposed in the first hypothesis of the study was confirmed while rejecting the null form. In addition, this statistical output was subjected to robustness check by checking the VIF in other to confirm the reliability of the model used for the data set by measuring its collinearity and the result revealed that the tolerance for the VIF for the predictor is low at 1.00 (see statistical appendix) implying that the model is reliable and robust. Furthermore, considering that the data was continuous, it is also important to test the sample distribution authenticity by conducting a normality test and the Shapiro-Wilki test which revealed that the sample for the model had normal distribution at 0.38, p < .001. This further strengthens the robustness of this model.

#### 4.3 Effect of DER on Tobin's Q (TQ).

Table 7 above shows the predictive effects of the DER on Tobin's Q (TQ). In order to test DER predictive effects, data from 66 firms extracted from performance indicators of nine non-finance sectors accounting for 10 years from 2011 to 2020 were analysed and the predictor additively explained only 1.6% of the variance in debt-to-equity ratio as evidenced on  $R^2 = .017$  and Adj.  $R^2 = .016$  which represents a statistically significant effect at F (2, 748) = 0.03, p < .001 with lower and upper limits at 0.014 and 0.047 respectively. From the result, the statistical output is a strong indication that the ratio of debt-to-equity financing in the capital structure of the evaluated firms positively and significantly affected the firms' Tobin's Q as statistically demonstrated. Thus, the alternative

hypothesis proposed in the second hypothesis of the study was confirmed while the null form was rejected. In addition, this statistical output was subjected to robustness check by checking the VIF in other to confirm the reliability of the model used for the data set by measuring its collinearity and the result revealed that the tolerance for the VIF for the predictor is low at 1.00 (see statistical appendix) implying that the model is reliable and robust. Furthermore, considering that the data was continuous data, it is also important to test the sample distribution authenticity by conducting a normality test and the Shapiro-Wilki test which revealed that the sample for the model had normal distribution at 0.68, p < .001. This further strengthens the robustness of this model.

# 4.4 Effect of DER on EBIT.

Table 7 above shows the predictive effects of the DER on EBIT. In order to test DER predictive effects, data from 66 firms extracted from performance indicators of nine non-finance sectors accounting for 10 years from 2011 to 2020 were analysed and the predictor additively explained 17.8% of the variance in debt-to-equity ratio as evidenced on  $R^2 = .179$  and Adj.  $R^2 = .178$  which represents a statistically significant effect at F (2, 748) = 2.16, p < .001 with lower and upper limits at 0.142 and 0.198 respectively. From the result, the statistical output is a strong indication that the ratio of debt-to-equity financing in the capital structure of the evaluated firms positively and significantly affected the firms' Earnings Before Interest and Tax as statistically demonstrated. Thus, the alternative hypothesis proposed in the third hypothesis of the study was confirmed while the null form was rejected. In addition, the statistical output was subjected to robustness check by checking the VIF in other to confirm the reliability of the model used for the data set by measuring its collinearity and the result revealed that the tolerance for the VIF for the predictor is low at 1.00 (see statistical appendix) implying that the model is reliable and robust. Furthermore, considering that the data was continuous

data, it is also important to test the sample distribution authenticity by conducting a normality test and the Shapiro-Wilki test which revealed that the sample for the model had normal distribution at 0.68, p < .001. This further strengthens the robustness of this model.

Table 8: Moderating Effect of ETR on the relationship between DER and Return on Assets (RoA), and Tobin's Q (TQ) and between Earnings Before Interest, Tax, Depreciation and Amortisation (EBITDA) and Tobin's Q (TQ).

95% Confidence Interval								
Moderator - ETR	Estimate	SE	Lower	Upper	- β	A. R <sup>2</sup>	F	р
Intercept	2.45	0.440	1.583	3.312	0.000	0 4 0 0	707	< .001
DER+RoA	2.16	0.077	1.927	2.230	0.704	0.499	121	< .001
ETR	-0.001	0.002	-0.006	-0.003	-0.019		0.531	0.466
Intercept	1.526	0.049	1.429	1.622	0.000	0.000 0.014 6.537<.00		.001
DER+TQ	2.16	0.008	0.013	0.0472	0129		12.55	< .001
ETR	-8.86	2.71	-6.210	-4.440	-0.012		0.106	0.744
Intercept	1.53	0.050	1.429	1.620	0.000	0.001	0.470 0.270	< .001
EBITDA+TQ	-6.76	1.30	-3.23	1.880	-0.019			< .001
ETR	-2.21	2.71	-7.530	3.110	-0.029		0.667	0.414

Predictors - D/E Ratio, EBITDA

#### 4.5 Moderating Effect of ETR on the Relationship Between DER and Return on Assets (RoA).

Table 8 shows the moderating effects of the ETR on the relationship between DER and RoA. In order to test the moderating effects of ETR, linear model analysis was conducted with data from 66 firms extracted from performance indicators of nine non-finance sectors accounting for 10 years from 2011 to 2020 and the model comparison showed that when ETR was added to DER + RoA relationship as moderator, the estimated coefficient was negative at -0.001, p > 0.47 (n = 750). In essence, the addition

of ETR failed to improve the power of the predictor (DER) on RoA. From the statistical output, the moderator was not significant, it did show that taxation implied a negative relationship with RoA which is suggestive that the more ETR the less the RoA and vice versa. However, simple effects analysis established the moderating effects of ETR on the relationship between DER and RoA at r (3, 747) = 2.08, p < .001 with no interaction effects. From the result, the statistical output is not strong enough for the moderation effects of ETR on the relationship between DER and RoA and hence, the fourth alternative hypothesis is not accepted. For the robustness, Shapiro Wilk for the test of normality of residual was significant at 0. 39, p < .001 implying that the distribution of observation data for the model was even.

#### 4.6- Moderating Effect of ETR on the Relationship between DER and Tobin's Q (TQ).

Table 8 above shows the moderating effects of the ETR on the relationship between DER and TQ. To test the moderating effects of ETR, linear model analysis was conducted with data from 66 firms extracted from performance indicators of nine non-finance sectors accounting for 10 years from 2011 to 2020 and the model comparison showed that when ETR was added to DER + TQ relationship as moderator, the estimated coefficient was negative at -8.87, p > 0.744 (n = 750). In essence, the addition of ETR failed to improve the power of the predictor (DER) on TQ; nor reduced its effects. From the statistical output, the moderator was not significant, implying that taxation has a negative relationship consequence when DER predicted TQ. This result is suggestive that the more ETR the less the TQ and vice versa due to its negative outcome. However, simple effects analysis established moderating effects of ETR on the relationship between DER and TQ at r(3, 747) = 0.03, p <.001 (F = 12.4) with no interaction effects. From the result, the statistical output is not strong enough for the moderation effects of ETR on the relationship between DER and TQ and hence, the fifth alternative hypothesis is

not accepted. For the robustness, Shapiro Wilk for the test of normality of residual was significant at 0.68, p < .001 implying that the distribution of observation data for the model was even.

# 4.7- Moderating Effect of ETR on the Relationship between Earnings Before Interest, Tax, Depreciation and Amortisation (EBITDA) and Tobin's Q (TQ).

Table 8 above also shows the moderating effects of the ETR on the relationship between EBITDA and TQ. To test the moderating effects of ETR, linear model analysis was conducted with data from 66 firms extracted from performance indicators of nine non-finance sectors accounting for 10 years from 2011 to 2020 and the model comparison showed that when ETR was added to EBITDA + TQ relationship as moderator, the estimated coefficient was negative at -2.21, p > 0.414 (n = 750). In essence, the addition of ETR didn't improve the power of the predictor (EBITDA) on TQ; nor reduced its effects. From the statistical output, the moderator was not significant, implying that effective taxation has a negative relationship consequence when EBITDA predicted TQ. This result is suggestive that the more ETR in the model, the less the TQ and vice versa due to its negative outcome. Equally, simple effects analysis failed to establish moderating effects of ETR on the relationship between EBITDA and TQ also at r (3, 747) = -6.76, p > .60 (F = 0.27) with no interaction effects. From the result, the statistical output is not strong enough for the moderation effects of ETR on the relationship between EBITDA and TQ and hence, the sixth alternative hypothesis is not accepted. For the robustness, Shapiro Wilk for the test of normality of residual was significant at 0. 66, p < .001implying that the distribution of observation data for the model was even. At the end of the analysis, statistical output revealed a mixed result; whereas the predictors were confirmed for hypotheses 1-3, the moderators were not confirmed as against hypotheses 4-6. The findings were discussed given their implications for the study.

#### 4.8 Robustness Test.

To thoroughly validate the postulated hypotheses, this chapter implements a robust systematic diagnostic process utilising alternative panel data estimators to address limitations with the baseline models. The initial phase applies a first-differenced generalised method of moments (GMM) specification drawing instruments centred on past lags of the endogenous regressors. This is followed by the system GMM approach incorporating levels equations and derivative moments (Arellano & Bover, 1995). While fixed and random effects specifications cannot fully resolve concerns over autocorrelation and heteroscedasticity, the GMM framework accounts for these challenges by removing time-invariant attributes through differencing and optimally weighting the moment conditions (Roodman, 2009).

I assess the appropriateness of the GMM instruments and assumptions using two identification strategies - the Hansen (1982) J-statistic to evaluate the joint validity of the instrument set, and the Arellano-Bond test to check for serial correlation patterns. Failure to reject the null hypotheses across these diagnostics at conventional significance levels affirms proper model identification and the lack of disturbance auto-correlation needed for consistent estimation (Schultz *et al.*, 2010). After verifying these prerequisites, I can interpret the output coefficients with reasonable confidence that the models are well-specified. However, retention of the null beyond thresholds like 0.25 for the Hansen J intimates instrument relevance issues.

### 4.8.1 GMM Test of the Effect of DER on Firm Performance

#### 4.8.1.1 Test of Hypothesis One

The effect of DER on the ROA of quoted manufacturing firms in the Nigerian Stock Exchange.

 $ROA_{it} = \alpha_0 + \beta_1 ROA_{it-1} + \beta_2 DER_{it} + \beta_3 FS_{it} + \beta_4 Age_{it} + \beta_5 SG_{it} + \beta_6 BS_{it} + \beta_7 MTB_{it} + \mu_i$ 

The results (Appendix 3, Table 9) showed a J-statistic value of 51.068; and the probability value was 0.216. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The findings are consistent with that reported in Table 4.4.1 of a positive association between DER and RoA. The lagged DV (ROA<sub>it-1</sub>) is positively associated with the current period ROA.

The system GMM outputs validating Hypothesis 1 are enclosed in Table 4.7.1. The debt-to-equity coefficient is positive and highly significant, aligning with the postulation that heightened financial leverage stimulates profitability. A percentage escalation in debt-to-equity proportion boosts return on assets by 1.86 percentage points. The control covariates also demonstrate significance, with firm scale and board structure exhibiting positive effects while maturity wields a negative impact.

The diagnostic statistics affirm instrument legitimacy and lack of sequential disturbance correlation. Specifically, the 51.07 J-statistic fails to reject the null hypothesis of appropriately specified overidentifying restrictions. Additionally, the high 0.216 p-value on the J-test indicates no instrument credibility concerns. Regarding serial correlation, the lack of rejection of the null at second order provides evidence of appropriate moment conditions and lack of auto-correlation. Given the verification of these stringent prerequisites, I strongly confirm Hypothesis 1 with high confidence in the validity of the outputs. The positive and significant debt-to-equity coefficient aligns with and corroborates agency and signalling theories around capital structure.

# 4.8.1.2 Test of Hypothesis Two.

The effect of DER on the earnings-per-share (EPS) of quoted manufacturing firms in the Nigerian Stock Exchange.

$$EPS_{it} = \alpha_0 + \beta_1 EPS_{it-1} + \beta_2 DER_{it} + \beta_3 FS_{it} + \beta_4 Age_{it} + \beta_6 SG_{it} + \beta_7 BS_{it} + \beta_8 MTB_{it} + \mu_i$$

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The results (as seen in Appendix 3, Table 10) showed a J-statistic value of 47.200, and the probability value was 0.343. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The findings are consistent with that reported in Table 4.4.2 of a positive association between DER and EPS. The lagged DV (EPS<sub>it-1</sub>) is positively associated with the current period EPS.

The system GMM estimates validating Hypothesis 2 are enclosed in Table 4.7.2. Aligning with theoretical projections, the debt-to-equity coefficient is positive and highly significant. A one per cent upturn in debt-to-equity boosts earnings per-share by 0.10 percentage points. This proposes that heightened leverage allows firms to increase returns available for ordinary shareholders. The effect remains economically sizeable after controlling for other explanatory factors like scale, age, growth, governance, and investment outlook.

Diagnostically, the model checks remain adept. The 47.20 J-statistic is unable to reject the null hypothesis of appropriately specified over-identifying constraints. Moreover, the 0.343 probability value on the J-test signifies no threats to instrument legitimacy per convention. Regarding serial correlation, retention of the null hypothesis at second order substantiates proper moment conditions and the absence of autocorrelation in the residuals. Given meeting these essential prerequisites, I strongly confirm Hypothesis 2 with conviction in the legitimacy of the outputs. The DER coefficient aligns with premises around financial leverage magnifying earnings for shareholders at reasonable levels.

# 4.8.1.3 Test of Hypothesis Three

The effect of DER on Tobin's Q of quoted manufacturing firms in the Nigerian Stock Exchange.  $TOBQ_{it} = \alpha_0 + \beta_1 TOBQ_{it-1} + \beta_2 DER_{it} + \beta_3 FS_{it} + \beta_4 Age_{it} + \beta_6 SG_{it} + \beta_7 BS_{it} + \beta_8 MTB_{it} + \mu_i$ 

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The results (as seen in Appendix 3, Table 11) showed a J-statistic value of 46.664; and the probability value was 0.363. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The findings are consistent with that reported in Table 11 of a positive association between DER and TOBQ. The lagged DV (TOBQ<sub>it-1</sub>) is positively associated with the current period TOBQ.

The system GMM estimates testing Hypothesis 3 are provided in Table 11. As predicted, the debt-toequity ratio coefficient is positive and highly significant. This suggests that increased financial leverage is associated with higher market valuations, aligned with theoretical contentions. Specifically, a percentage point increase in debt-to-equity proportion lifts Tobin's Q by 0.03 units. The control variables also demonstrate significance, though firm size seems to share an inverse relationship with market performance.

Diagnostically, the Hansen J-statistic of 46.66 fails to reject the null hypothesis of appropriately specified overidentifying restrictions with a 0.363 p-value. This supports the validity of the instruments. Additionally, retaining the null hypothesis of no serial correlation at second order indicates the absence of disturbance auto-correlation. Meeting these essential prerequisites, I strongly confirm Hypothesis 3 with conviction in the model outputs. The DER coefficient provides corroborating evidence that heightened leverage at prudent levels boosts market-based metrics of firm success.

#### 4.8.1.4 Test of Hypothesis Four

The effect of DER on the EBIT of quoted manufacturing firms in the Nigerian Stock Exchange.  $EBIT_{it} = \alpha_0 + \beta_1 EBIT_{it-1} + \beta_2 DER_{it} + \beta_3 FS_{it} + \beta_4 Age_{it} + \beta_6 SG_{it} + \beta_7 BS_{it} + \beta_8 MTB_{it} + \mu_i$ 

The results (as seen in Appendix 3, Table 12) showed a J-statistic value of 52.127, and the probability value was 0.187. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The findings are consistent with that reported in Table 12 of a positive association between DER and EBIT. The lagged DV (EBIT<sub>it-1</sub>) is positively associated with the current period EBIT.

The system GMM estimates evaluating Hypothesis 4 are presented in Table 12. Mirroring projections, the debt-to-equity coefficient is positive and highly significant. Specifically, a percentage point escalation in debt-to-equity lifts earnings before interest and taxes by 4.35 units. This supports arguments that reasonable financial leverage allows firms to amplify returns for their operational investments. The control variables demonstrate significance as well, though firm size shares an unexpected negative association.

Diagnostically, at 52.13 the Hansen J-statistic is unable to reject the null hypothesis of appropriately specified over-identifying restrictions. Additionally, the 0.187 probability value indicates no threats to instrument legitimacy per convention. Regarding serial correlation, retaining the null hypothesis at second order substantiates appropriate moment conditions and lack of error term auto-correlation. Given the verification of these essential prerequisites, I strongly confirm Hypothesis 4 with conviction in the outputs. The positive and significant DER coefficient aligns with contentions that heightened leverage favours profitability up to reasonable thresholds, bolstering operating earnings.

#### 4.8.1.5 Test of Hypothesis Five

The effect of DER on the earnings before interest, taxes, depreciation and amortisation (EBITDA) of quoted manufacturing firms in the Nigerian Stock Exchange.

 $EBITDA_{it} = \alpha_0 + \beta_1 EBITDA_{it-1} + \beta_2 DER_{it} + \beta_3 FS_{it} + \beta_4 Age_{it} + \beta_6 SG_{it} + \beta_7 BS_{it} + \beta_8 MTB_{it} + \mu_i$ 

The results (as seen in Appendix 3, Table 13) showed a J-statistic value of 48.146; and the probability value was 0.309. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The findings are consistent with that reported in Table 13 of a negative association between DER and EBITDA. The lagged DV (EBITDA<sub>it-1</sub>) is negatively associated with the current period EBITDA.

Table 13 contains the system GMM estimates testing Hypothesis 5. Contrary to postulations, the debtto-equity ratio coefficient is negative and highly significant. Specifically, a one per cent upturn in debt-to-equity curtails earnings before interest, taxes, depreciation, and amortisation by 54.43 units. While unforeseen, this result intimates that higher financial leverage potentially hampers overall operating performance when accounting for non-cash charges like depreciation. The control variables also demonstrate significance.

Diagnostically, instrument validity and lack of residual autocorrelation are affirmed. The 48.15 Jstatistic is unable to reject the null hypothesis of appropriately specified overidentifying restrictions. Additionally, the 0.309 probability value signifies instrument legitimacy by convention. Retaining the null hypothesis of no serial correlation at second order further ratifies apt moment conditions. Despite meeting these diagnostic checks, Hypothesis 5 is rejected based on the unexpected sign and significance of the debt-to-equity coefficient.

## 4.8.1.6 Test of Hypothesis Six

The effect of TSD on the debt-to-equity ratio of quoted manufacturing firms in the Nigerian Stock Exchange.

$$DER_{it} = \alpha_0 + \beta_1 DER_{it-1} + \beta_2 TSD_{it} + \beta_3 FS_{it} + \beta_4 Age_{it} + \beta_5 SG_{it} + \beta_6 BS_{it} + \beta_7 MTB_{it} + \mu_i$$

The results (as seen in Appendix 3, Table 14) showed a J-statistic value of 43.384; and the probability value was 0.498. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The findings are consistent with that reported in Table 14 of a positive association between TSD and DER. The lagged DV (DER<sub>it-1</sub>) is positively associated with the current period TOBQ.

The system GMM estimates evaluating Hypothesis 6 are provided in Table 14. As predicted, the shortterm debt coefficient is positive and highly significant. Specifically, a one-unit increase in short-term debt lifts the debt-to-equity ratio by 0.02 units. This finding aligns with arguments that firms amplify financial leverage through short-term borrowing to fund operations and investment needs. The control variables also demonstrate significance for the most part.

Diagnostically, the 43.38 J-statistic fails to reject the null hypothesis of appropriately specified overidentifying restrictions with a 0.498 p-value. This affirms instrument validity. Furthermore, retaining the null hypothesis of no serial correlation at second order signifies the absence of disturbance autocorrelation as desired. Given the verification of these essential prerequisites, I strongly confirm Hypothesis 6 with conviction in the outputs. The positive and significant short-term debt coefficient corroborates assertions that firms heighten leverage in the short run via avenues like credit lines, commercial paper etc.

# 4.8.1.7 Test of Hypothesis Seven.

The effect of TSD on the firm performance of quoted manufacturing firms in the Nigerian Stock Exchange.

$$TOBQ_{it} = \alpha_0 + \beta_1 TOBQ_{it-1} + \beta_2 TSD_{it} + \beta_3 FS_{it} + \beta_4 Age_{it} + \beta_5 SG_{it} + \beta_6 BS_{it} + \beta_7 MTB_{it} + \mu_i$$

The results (as seen in Appendix 3, Table 15) showed a J-statistic value of 48.542, and the probability value was 0.295. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The findings are not consistent with that reported in Table 15 of a positive association between TSD and TOBQ. The lagged DV (TOBQ<sub>it-1</sub>) is positively associated with the current period TOBQ.

The system GMM results analysing Hypothesis 7 are presented in Table 15. As predicted, the shortterm debt coefficient is negative and highly significant, indicating that heavy reliance on short-term borrowing curtails market-based measures of success. Specifically, a one-unit increase in short-term debt lowers Tobin's Q by 0.0006 units. This aligns with arguments that excessive short-term leverage escalates risk and uncertainty, hampering valuation. The control variables also demonstrate significance for the most part.

Diagnostically, the 48.54 J-statistic fails to reject the null hypothesis assuring appropriately specified over-identifying restrictions. The 0.295 probability value also signifies instrument legitimacy. Additionally, retaining the null hypothesis of no serial correlation at the second-order confirms the absence of disturbance auto-correlation. Given the verification of these essential prerequisites, I strongly confirm Hypothesis 7 with conviction in the outputs. The negative short-term debt coefficient supports contentions that over-dependence on short-term leverage undermines market-based performance metrics.

#### 4.8.1.8 Test of Hypothesis Eight

The effect of ETR on the debt-to-equity ratio of quoted manufacturing firms in the Nigerian Stock Exchange.

$$DER_{it} = \alpha_0 + \beta_1 DER_{it-1} + \beta_2 ETR_{it} + \beta_3 FS_{it} + \beta_4 Age_{it} + \beta_5 SG_{it} + \beta_6 BS_{it} + \beta_7 MTB_{it} + \mu_i$$

The results (as seen in Appendix 3, Table 16) showed a J-statistic value of 43.952; and the probability value was 0.474. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The findings are consistent with that reported in Table 16 of a negative association between ETR and DER. The lagged DV (DER<sub>it-1</sub>) is positively associated with the current period DER.

The system GMM outputs evaluating Hypothesis 8 are enclosed in Table 16. As hypothesized, the tax burden coefficient is negative and highly significant, signifying that heightened tax rates diminish financial leverage. Specifically, a one percentage point upturn in the effective tax rate lowers debt-to-equity by 0.01 units. This supports arguments that escalated tax obligations restrict internal funding capacity, compelling firms to moderate leverage. The control variables also share significance for the most part.

Diagnostically, the 43.95 J-statistic fails to reject the null hypothesis of appropriately specified overidentifying restrictions with a 0.474 p-value, affirming instrument validity. Furthermore, retaining the null hypothesis of no residual autocorrelation at second order substantiates appropriate moment conditions. Given the verification of these essential prerequisites, I strongly confirm Hypothesis 8 with conviction in the outputs. The negative and significant tax burden coefficient aligns with contentions that heightened rates of tax diminish debt capacity.

## 4.8.1.9 Test of Hypothesis Nine

The effect of ETR on the firm performance of quoted manufacturing firms in the Nigerian Stock Exchange.

$$TOBQ_{it} = \alpha_0 + \beta_1 TOBQ_{it-1} + \beta_2 ETR_{it} + \beta_3 FS_{it} + \beta_4 Age_{it} + \beta_5 SG_{it} + \beta_6 BS_{it} + \beta_7 MTB_{it} + \mu_i$$

The results (as seen in Appendix 3, Table 17) showed a J-statistic value of 50.992, and the probability value was 0.218. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The findings are not consistent with that reported in Table 17 of a negative association between ETR and TOBQ. The lagged DV (TOBQ<sub>it-1</sub>) is positively associated with the current period DER.

The system GMM estimates testing Hypothesis 9 are provided in Table 17. Partially confirming postulations, the tax burden coefficient is positive though mildly significant. Specifically, a percentage point increase in effective tax rate lifts Tobin's Q by a negligible 0.0006 units. While the effect is positive as predicted, the limited economic significance suggests tax obligations wield minimal influence on market-based prosperity proxies. The control variables demonstrate stronger impacts for the most part.

Diagnostically, at 50.99 the Hansen J-statistic fails to reject the null hypothesis, affirming valid instruments. The 0.218 probability value further ratifies the instrument's legitimacy. Additionally, retaining the null hypothesis of no serial correlation at the second order substantiates the lack of disturbance auto-correlation. Though the effective tax rate coefficient is positive, as hypothesised, the limited economic influence cannot provide resounding confirmation of Hypothesis 9.

#### 4.8.1.10 Test of Hypothesis Ten

The moderation effect of ETR on the relationship between DER and ROA of quoted manufacturing firms in the Nigerian Stock Exchange.

 $ROA_{it} = \alpha_0 + \beta_1 ROA_{it-1} + \beta_2 DER_{it} + \beta_3 ETR_{it} + \beta_4 DER_{it} * ETR_{it} + \beta_5 FS_{it} + \beta_6 Age_{it} + \beta_7 SG_{it} + \beta_8 BS_{it} + \beta_9 MTB_{it} + \mu_i$ 

The Hansen test (as seen in Appendix 3, Table 18) for over-identifying restrictions returned a Jstatistic of 47.164, with an affiliated probability value of 0.344. This exceeds standard significance levels, indicating failure to reject the null hypothesis and confirming joint instrument validity. The outputs align with the earlier baseline results in Table 18, revealing a positively significant interaction effect between financial leverage and tax rates on profitability. Additionally, the lagged dependent variable, ROAit-1, demonstrates significant path dependence as expected under the dynamic model specification.

With diagnostics affirming instrument relevance and lack of serial error correlation, I can interpret the detected associations between debt utilisation, tax obligations, and earning power more conclusively. The empirical findings lend credence to the conceptual premises around capital structure preferences balancing risk-return trade-offs and tax considerations.

### 4.8.1.11 Test of Hypothesis Eleven.

The moderation effect of ETR on the relationship between DER and EPS of quoted manufacturing firms in the Nigerian Stock Exchange.

 $EPS_{it} = \alpha_0 + \beta_1 EPS_{it-1} + \beta_2 DER_{it} + \beta_3 ETR_{it} + \beta_4 DER_{it} * ETR_{it} + \beta_5 FS_{it} + \beta_6 Age_{it} + \beta_7 SG_{it} + \beta_8 BS_{it} + \beta_9 MTB_{it} + \mu_i$ 

Table 19: Difference GMM output for hypothesis eleven (See Appendix 3, Table 19)

The Hansen test (as seen in Appendix 3, Table 19) for instrument validity returned a J-statistic of 45.634, with a p-value of 0.404—well exceeding standard significance levels. This leads to the retention of the null hypothesis of appropriately specified instruments. Mirroring the baseline outputs in Table 4.4.11, results reveal a negatively significant interaction effect between financial leverage 284

and tax rates on earnings per-share. Additionally, the lagged dependent variable, EPSit-1, demonstrates expected path dependence in the theorised dynamic model.

With diagnostics affirming the heterogeneity of the instruments and the lack of serial correlation, I can interpret the detected negative association between debt utilisation, tax obligations, and profitability per-share more conclusively. The findings accord with conceptual premises regarding how leverage and taxation may exacerbate risk factors, outweighing potential gains.

### 4.8.1.12 Test of Hypothesis Twelve

The moderation effect of ETR on the relationship between DER and TOBQ of quoted manufacturing firms in the Nigerian Stock Exchange.

 $TOBQ_{it} = \alpha_0 + \beta_1 TOBQ_{it-1} + \beta_2 DER_{it} + \beta_3 ETR_{it} + \beta_4 DER_{it} * ETR_{it} + \beta_5 FS_{it} + \beta_6 Age_{it} + \beta_7 SG_{it} + \beta_8 BS_{it} + \beta_9 MTB_{it} + \mu_i$ 

Table 20: Difference GMM output for hypothesis twelve (See Appendix 3, Table 20)

The Hansen J-statistic (as seen in Appendix 3, Table 20) returned a value of 47.514, with a corresponding probability of 0.332—well beyond typical significance levels. This confirms the retention of the null hypothesis of jointly valid instruments. Echoing the main findings in Table 20, a negatively significant interaction effect persists between financial leverage and tax rates on Tobin's Q market valuation proxy. Additionally, the demonstration of path dependence remains evident via the positive association between lagged and current Tobin's Q.

With diagnostics affirming instrument validity and lack of error auto-correlation, I can affirm the detected negative relationship between capital structure, tax considerations, and market performance more conclusively. The empirical observations accord with conceptual logic around investor perceptions of balancing risk-return profiles.

#### 4.8.1.13 Test of Hypothesis Thirteen

The moderation effect of ETR on the relationship between DER and EBIT of quoted manufacturing firms in the Nigerian Stock Exchange.

$$\begin{split} EBIT_{it} &= \alpha_0 + \beta_1 EBIT_{it-1} + \beta_2 DER_{it} + \beta_3 ETR_{it} + \beta_4 DER_{it} * ETR_{it} + \beta_5 FS_{it} + \beta_6 Age_{it} + \beta_7 SG_{it} + \beta_8 BS_{it} + \beta_9 MTB_{it} + \mu_i \end{split}$$

Table 21: Difference GMM output for hypothesis thirteen (See Appendix 3, Table 22)

The Hansen test (as seen in Appendix 3, Table 21) returned to a J-statistic of 45.709, with a p-value of 0.401. This exceeds typical significance levels, leading to the retention of the null hypothesis of valid instruments. However, unlike the baseline results in Table 21, the system GMM model reveals no significant interaction effect between financial leverage and tax rates on operating profitability. The lagged dependent variable, EBITit-1, demonstrates expected persistence in predicting current earnings before interest and taxes.

With diagnostics affirming appropriately specified instruments and lack of serial correlation, the absence of a significant debt tax interaction merits notes given earlier fixed effects output. This divergence signals potential technique-specific inconsistencies warranting deeper investigation through further sensitivity analyses. However, model validity per the Hansen and Arellano-Bond statistics provides reasonable confidence for interpreting the estimates and informing theory.

### 4.8.1.14 Test of Hypothesis Fourteen

The moderation effect of ETR on the relationship between DER and EBITDA of quoted manufacturing firms in the Nigerian Stock Exchange.

$$\begin{split} EBITDA_{it} &= \alpha_0 + \beta_1 EBITDA_{it-1} + \beta_2 DER_{it} + \beta_3 ETR_{it} + \beta_4 DER_{it} * ETR_{it} + \beta_5 FS_{it} + \beta_6 Age_{it} + \beta_7 SG_{it} + \\ \beta_8 BS_{it} + \beta_9 MTB_{it} + \mu_i \end{split}$$

Table 22: Difference GMM output for hypothesis fourteen (See Appendix 3, Table 22)

The Hansen test (as seen in Appendix 3, Table 22) produced a J-statistic of 46.389, with a p-value of 0.374—well exceeding conventional significance levels. This leads to the retention of the null hypothesis of appropriately specified instruments. Mirroring earlier outputs in Table 22, a positively significant interaction effect persists between financial leverage and tax rates in predicting EBITDA as a cash flow proxy for profitability. Demonstrating expected persistence, the lagged dependent variable, EBITDAit-1, also maintains its positive association with current period earnings.

With diagnostics affirming instrument validity and lack of serial correlation, I can interpret the detected interactive relationship and path dependence more conclusively. The outputs lend credence to conceptual premises regarding how tax considerations influence financial leverage's impact on cash-generating potential before accounting adjustments.

#### 4.9.1 Effect of STDE and LTDE on Firm Performance

The following alternative DER proxies, short-term debt-to-equity ratio (STDE) and long-term debtto-equity ratio (LTDE) were employed in a series of equations to examine their effect on firm performance proxies:

 $ROA_{it} = \alpha_0 + \beta_1 ROA_{it-1} + \beta_2 STDE_{it} + \beta_3 LTDE_{it} + \beta_4 FS_{it} + \beta_5 Age_{it} + \beta_6 SG_{it} + \beta_7 BS_{it} + \beta_8 MTB_{it} + \mu_i$ Table 23: STDE and LTDE effect on RoA (See Appendix 3, Table 23)

The results (as seen in Appendix 3, Table 23) showed a J-statistic value of 50.418; and the probability value was 0. 235. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 287

5% and 1% significance levels. The  $R^2$  value was 0.279; and the Adjusted  $R^2$  value of the model was 0.187; thus, approximately 18.7% variation of the DV (i.e., RoA) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic, which had a value of 3.038, p-value (p=0.0000), which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the RoA and explanatory variables. The results showed that short-term and long-term debt positively affect the ROA of non-financial firms in the NSE. The lagged DV (ROA<sub>it-1</sub>) is positively associated with the current period ROA.

 $EPS_{it} = \alpha_0 + \beta_1 EPS_{it-1} + \beta_2 STDE_{it} + \beta_3 LTDE_{it} + \beta_4 FS_{it} + \beta_5 Age_{it} + \beta_6 SG_{it} + \beta_7 BS_{it} + \beta_8 MTB_{it} + \mu_i$ 

Table 24: STDE and LTDE effect on EPS (See Appendix 3, Table 24)

The results (as seen in Appendix 3, Table 24) showed a J-statistic value of 45.583; and the probability value was 0. 406. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The  $R^2$  value was 0.581; and the Adjusted  $R^2$  value of the model was 0.575; thus, approximately 57.5% variation of the DV (i.e., EPS) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic which had a value of 96.514, p-value (p=0.0000) which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the EPS and explanatory variables. The results showed that short-term and long-term debt positively affect the EPS of non-financial firms in the NSE. The lagged DV (EPS<sub>it-1</sub>) is positively associated with the current period EPS.

 $TOBQ_{it} = \alpha_0 + \beta_1 TOBQ_{it-1} + \beta_2 STDE_{it} + \beta_3 LTDE_{it} + \beta_4 FS_{it} + \beta_5 Age_{it} + \beta_6 SG_{it} + \beta_7 BS_{it} + \beta_8 MTB_{it} + \mu_i$ Table 25: STDE and LTDE effect on TOBQ (See Appendix 3, Table 25)

The results (as seen in Appendix 3, Table 25) showed a J-statistic value of 48.409; and the probability value was 0. 300.This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The R<sup>2</sup> value was 0.656, and the Adjusted R<sup>2</sup> value of the model was 0.651; thus, approximately 65.1% variation of the DV (i.e., TOBQ) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic which had a value of 133.037, p-value (p=0.0000) which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the TOBQ and explanatory variables. The results showed that short-term debt negatively non-significantly affects the TOBQ of non-financial firms. However, long-term debt positively affects the TOBQ of non-financial firms in the NSE. However, the lagged DV (TOBQ<sub>it-1</sub>) is positively associated with the current period TOBQ. EBIT<sub>it</sub> =  $\alpha_0 + \beta_1$ EBIT<sub>it-1</sub> +  $\beta_2$ STD<sub>it</sub> +  $\beta_3$ LTD<sub>it</sub> +  $\beta_4$ FS<sub>it</sub> +  $\beta_5$ Age<sub>it</sub> +  $\beta_6$ SG<sub>it</sub> +  $\beta_7$ BS<sub>it</sub> +  $\beta_8$ MTB<sub>it</sub> +  $\mu_i$ 

Table 26: STDE and LTDE effect on EBIT (See Appendix 3, Table 26)

The results (as seen in Appendix 3, Table 26) showed a J-statistic value of 45.205; and the probability value was 0. 421. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The  $R^2$  value was 0.107; and the Adjusted  $R^2$  value of the model was 0.094; thus, approximately 9.4% variation of the DV (i.e., EBIT) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic, which had a value of 8.301, p-value (p=0.0000), which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the EBIT and explanatory variables. The results showed that short-term debt negatively significantly affects the EBIT of non-financial firms. However, long-term debt positively affects the EBIT of non-financial firms in the NSE. However, the lagged DV (EBIT<sub>it-1</sub>) is positively associated with the current period EBIT.

 $EBITDA_{it} = \alpha_0 + \beta_1 EBITDA_{it-1} + \beta_2 STD_{it} + \beta_3 LTD_{it} + \beta_4 FS_{it} + \beta_5 Age_{it} + \beta_6 SG_{it} + \beta_7 BS_{it} + \beta_8 MTB_{it} + \mu_i$ 

## Table 27: STDE and LTDE effect on EBITDA (See Appendix 3, Table 27)

The results (as seen in Appendix 3, Table 27) showed a J-statistic value of 49.254; and the probability value was 0. 271. This indicates that the Ho cannot be rejected, i.e., the instruments remain valid at 5% and 1% significance levels. The R<sup>2</sup> value was 0.320; and the Adjusted R<sup>2</sup> value of the model was 0.310; thus, approximately 31.0% variation of the DV (i.e., EBITDA) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic which had a value of 32.696, p-value (p=0.0000) which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the EBITDA and explanatory variables. The results showed that short-term debt negatively significantly affect the EBITDA of non-financial firms. However, the long-term debt positively affects the EBITDA of non-financial firms in the NSE. However, the lagged DV (EBITDA<sub>it-1</sub>) negatively associated with current period EBITDA.

### 4.10 Robustness Test – Worldwide Governance Indicators

In this section, the worldwide governance indicators were added to the variables prior to estimation using pooled and panel GMM (first differences). The findings are reported briefly for brevity as follows:

# 4.10.1 Test of Hypothesis One

The effect of DER on RoA of quoted manufacturing firms in the Nigerian Stock Exchange. Table 28: OLS output for hypothesis one with WGI (See Appendix 3, Table 28) The predictors specifically comprise:

- DER (leverage)
- VACC Voice & accountability governance indicator
- PSVT Political stability governance indicator
- GVEF Government effectiveness index
- REGQ Regulatory quality index
- ROLA Rule of law governance indicator

As seen in Appendix 3, Table 28, the R<sup>2</sup> value was 0.686; and the Adjusted R<sup>2</sup> of the model was 0.681; thus, approximately 68.1% variation of the DV (i.e., RoA) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic which had a value of 141.27, p-value (p=0.0000) which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the RoA and explanatory variables. The results showed that DER positively affect the RoA; also, the interaction of DER\*VACC was positive; while DER\*PSVT, DER\*GVEF, DER\*REGQ, DER\*ROLA interactions were negative. For example, the DER\*REGQ interaction, with a coefficient of -11.341, suggests that regulatory quality supplements corporate debt's disciplining mechanism on environmental performance since oversight frameworks boost compliance. In summary, this advanced regression analysis confirms that financial leverage's impact varies based on prevailing governance conditions.

### 4.10.2 Test of Hypothesis Two

The effect of DER on the EPS of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 29: OLS output for hypothesis two with WGI (See Appendix 3, Table 29) As seen in Appendix 3, Table 29, the R<sup>2</sup> value was 0.115, and the Adjusted R<sup>2</sup> of the model was 0.101; thus, approximately 10.1% variation of the DV (i.e., EPS) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic, which had a value of 8.359, p-value (p=0.0000), which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the EPS and explanatory variables. The results showed that DER positively affects the EPS; also, the interaction of DER\*VACC, DER\*PSVT, DER\*REGQ, and DER\*ROLA were positive, while DER\*GVEF interaction was negative.

# 4.10.3 Test of Hypothesis Three

The effect of DER on Tobin's Q of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 30: OLS output for hypothesis three with WGI (See Appendix 3, Table 30)

As seen in Appendix 3, Table 30, the R<sup>2</sup> value was 0.110; and the Adjusted R<sup>2</sup> of the model was 0.096; thus, the model explanatory variables accounted for approximately 9.6% variation of the DV (i.e., TOBQ). The statistical significance is confirmed using the F-statistic which had a value of 7.982, p-value (p=0.0000) which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the TOBQ and explanatory variables. The results showed that DER positively affects the TOBQ; the interaction of DER\*VACC, DER\*REGQ, and DER\*ROLA were positive, while DER\*PSVT and DER\*GVEF interactions were negative.

### 4.10.4 Test of Hypothesis Four

The effect of DER on Tobin's Q of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 31: OLS output for hypothesis four with WGI (See Appendix 3, Table 31)

As seen in Appendix 3, Table 31, the R<sup>2</sup> value was 0.308, and the Adjusted R<sup>2</sup> of the model was 0.297; thus, the model explanatory variables accounted for approximately 29.7% variation of the DV (i.e., EBIT). The statistical significance is confirmed using the F-statistic which had a value of 28.789, pvalue (p=0.0000) which is statistically significant. Conclusively, the model is statistically significant 292 and can describe the relationship between the EBIT and explanatory variables. The results showed that DER negatively affect the EBIT; also, the interactions of DER\*VACC, DER\*PSVT, DER\*GVEF, DER\*REGQ, and DER\*ROLA were negative.

## 4.10.5 Test of Hypothesis Five

The effect of DER on the earnings before interest, taxes, depreciation and amortisation (EBITDA) of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 32: OLS output for hypothesis five with WGI (See Appendix 3, Table 32)

As seen in Appendix 3, Table 32, the R<sup>2</sup> value was 0.196, and the Adjusted R<sup>2</sup> of the model was 0.183; thus, the model explanatory variables accounted for approximately 18.3% variation of the DV (i.e., EBITDA). The statistical significance is confirmed using the F-statistic, which had a value of 15.725, p-value (p=0.0000), which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the EBITDA and explanatory variables. The results showed that DER negatively affects the EBITDA; also, the interactions of DER\*PSVT, DER\*GVEF, DER\*REGQ, and DER\*ROLA were negative, while DER\*VACC was positive.

# 4.10.6 Test of Hypothesis Six

The effect of TSD on the debt-to-equity ratio of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 33: OLS output for hypothesis six with WGI (See Appendix 3, Table 33)

As seen in Appendix 3, Table 33, the  $R^2$  value was 0.912, and the Adjusted  $R^2$  of the model was 0.908; thus, approximately 90.8% variation of the DV (i.e., EBITDA) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic, which had a value of 33.595, p-value (p=0.0000), which is statistically significant. Conclusively, the model is

statistically significant and can describe the relationship between the TSD and explanatory variables. The results showed that TSD positively affects the DER; also, the interactions of DER\*VACC, DER\*PSVT, DER\*REGQ, and DER\*ROLA were negative, while DER\*GVEF was positive.

### 4.10.7 Test of Hypothesis Seven

The effect of TSD on the firm performance of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 34: OLS output for hypothesis seven with WGI (See Appendix 3, Table 34)

As seen in Appendix 3, Table 34, the R<sup>2</sup> value was 0.076; and the Adjusted R<sup>2</sup> of the model was 0.059; thus, approximately 5.9% variation of the DV (i.e., TOBQ) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic, which had a value of 4.583, p-value (p=0.0000), which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the TSD and explanatory variables. The results showed that TSD positively affect the TOBQ; also, the interactions of DER\*VACC, DER\*PSVT, and DER\*GVEF were negative, while DER\*REGQ and DER\*ROLA was positive.

# 4.10.8 Test of Hypothesis Eight

The effect of ETR on the debt-to-equity ratio of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 35: OLS output for hypothesis eight with WGI (See Appendix 3, Table 35)

As seen in Appendix 3, Table 35, the  $R^2$  value was 0.980; and the Adjusted  $R^2$  of the model was 0.960; thus, approximately 96.0% variation of the DV (i.e., DER) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic which had a value of 39.892, p-value (p=0.0000) which is statistically significant. Conclusively, the model is statistically

significant and can describe the relationship between the ETR and explanatory variables. The results showed that ETR negatively affect the DER; also, the interactions of DER\*VACC, DER\*PSVT, DER\*REGQ, and DER\*ROLA were negative; while, and DER\*GVEF was positive.

### 4.10.9 Test of Hypothesis Nine

The effect of ETR on the firm performance of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 36: OLS output for hypothesis nine with WGI (See Appendix 3, Table 36)

As seen in Appendix 3, Table 36, the R<sup>2</sup> value was 0.106, and the Adjusted R<sup>2</sup> of the model was 0.093; thus, approximately 9.3% variation of the DV (i.e., TOBQ) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic, which had a value of 7.694, p-value (p=0.0000), which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the ETR and explanatory variables. The results showed that ETR positively affects the TOBQ; also, the interactions of DER\*VACC, DER\*GVEF, DER\*REGQ, and DER\*ROLA were negative, while the interaction of DER\*PSVT was positive.

# 4.10.10 Test of Hypothesis Ten

The moderation effect of ETR on the relationship between DER and RoA of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 37: OLS output for hypothesis ten with WGI (See Appendix 3, Table 37)

As seen in Appendix 3, Table 37, the  $R^2$  value was 0.686, and the Adjusted  $R^2$  of the model was 0.680; thus, approximately 68.0% variation of the DV (i.e., RoA) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic, which had a value of 119.201, p-value (p=0.0000), which is statistically significant. Conclusively, the model is

statistically significant and can describe the relationship between the DER\*ETR and explanatory variables. The results showed that DER\*ETR positively affected the RoA; also, the interactions of DER\*PSVT, DER\*GVEF, DER\*REGQ, and DER\*ROLA were negative, while the interaction of DER\*VACC was positive.

### 4.10.11 Test of Hypothesis Eleven

The moderation effect of ETR on the relationship between DER and EPS of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 38: OLS output for hypothesis eleven with WGI (See Appendix 3, Table 38)

As seen in Appendix 3, Table 38, the R<sup>2</sup> value was 0.182, and the Adjusted R<sup>2</sup> of the model was 0.167; thus, approximately 16.7% variation of the DV (i.e., EPS) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic, which had a value of 12.108, p-value (p=0.0000), which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the DER\*ETR and explanatory variables. The results showed that DER\*ETR negatively affected the EPS; also, the interactions of DER\*VACC, DER\*PSVT, and DER\*REGQ were positive, while DER\*GVEF and DER\*ROLA were negative.

### 4.10.12 Test of Hypothesis Twelve.

The moderation effect of ETR on the relationship between DER and TOBQ of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 39: OLS output for hypothesis twelve with WGI (See Appendix 3, Table 39)

As seen in Appendix 3, Table 39, the  $R^2$  value was 0.180; and the Adjusted  $R^2$  of the model was 0.165; thus, approximately 11.95% variation of the DV (i.e., TOBQ) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic which had a value

of 11.951, p-value (p=0.0000) which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the DER\*ETR and explanatory variables. The results showed that DER\*ETR negatively affect the TOBQ; also, the interactions of DER\*VACC, DER\*REGQ, and DER\*ROLA were positive, while DER\*PSVT and DER\*GVEF were negative.

### 4.10.13 Test of Hypothesis Thirteen

The moderation effect of ETR on the relationship between DER and EBIT of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 40: OLS output for hypothesis thirteen with WGI (See Appendix 3, Table 40)

As seen in Appendix 3, Table 40, the R<sup>2</sup> value was 0.312, and the Adjusted R<sup>2</sup> of the model was 0.300; thus, approximately 30.0% variation of the DV (i.e., EBIT) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic, which had a value of 24.772, p-value (p=0.0000), which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the DER\*ETR and explanatory variables. The results showed that DER\*ETR negatively affect the EBIT; also, the interactions of DER\*VACC, DER\*PSVT, DER\*REGQ, and DER\*ROLA were negative, while DER\*GVEF was positive.

# 4.10.14 Test of Hypothesis Fourteen

The moderation effect of ETR on the relationship between DER and EBITDA of quoted manufacturing firms in the Nigerian Stock Exchange.

Table 41: OLS output for hypothesis fourteen with WGI (See Appendix 3, Table 41)

As seen in Appendix 3, Table 41, the R<sup>2</sup> value was 0.196, and the Adjusted R<sup>2</sup> of the model was 0.181; thus, approximately 18.1% variation of the DV (i.e., EBITDA) was accounted for by the model explanatory variables. The statistical significance is confirmed using the F-statistic, which had a value

of 13.273, p-value (p=0.0000), which is statistically significant. Conclusively, the model is statistically significant and can describe the relationship between the DER\*ETR and explanatory variables. The results showed that DER\*ETR positively affected the EBITDA; also, the interactions of DER\*PSVT, DER\*GVEF, DER\*REGQ, and DER\*ROLA were negative, while DER\*VACC were positive.

#### 4.11. Bonferroni Test.

Table 42 MODEL RESULTS FOR HYPOTHESES 1 – 5 (See Appendix 3, Table 42)

As seen in Appendix 3, Table 42

**Hypothesis 1**—The regression coefficient of DER had a Bonferroni p-value of 0.0000 less than the nominal level (0.05). The table clearly shows that the BAT-adjusted level, based on the number of predictors in the model, differs.

Conclusively, as the number of predictors with a non-zero correlation with RoA increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence rejects Ho<sub>1</sub>; thus, DER will significantly determine the Return on Assets (RoA) of quoted manufacturing firms in the Nigerian Stock Exchange.

**Hypothesis 2** - The regression coefficient of DER had a Bonferroni p-value of 0.0007 less than the nominal level (0.05). It is clear from the table that the BAT-adjusted level differs based on the number of predictors in the model. Conclusively, as the number of predictors with a non-zero correlation with EPS increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value. **Decision:** The evidence rejects Ho<sub>2</sub>; thus, the Debt to the DER will significantly determine the Earnings per share (EPS) of quoted manufacturing firms in the Nigerian Stock Exchange.

**Hypothesis 3** - The regression coefficient of DER had a Bonferroni p-value of 0.0038, less than the nominal level (0.05). It is clear from the table that the BAT-adjusted level differs based on the number of predictors in the model. Conclusively, as the number of predictors with a non-zero correlation with Tobin's Q increases, the BAT-adjusted levels

get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence rejects Ho<sub>3</sub>; thus, the Debt to the DER will significantly determine Tobin's Q of quoted manufacturing firms in the Nigerian Stock Exchange.

**Hypothesis 4** - The regression coefficient of DER had a Bonferroni p-value of 0.0000 less than the nominal level (0.05). It is clear from the table that the BAT-adjusted level differs based on the number of predictors in the model. Conclusively, as the number of predictors with a non-zero correlation with EBIT increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value. **Decision:** The evidence rejects Ho<sub>4</sub>; thus, DER will significantly determine the EBIT of quoted manufacturing firms in the Nigerian Stock Exchange.

**Hypothesis 5** - The regression coefficient of DER had a Bonferroni p-value of 0.0002 less than the nominal level (0.05). It is clear from the table that the BAT-adjusted level differs based on the number of predictors in the model. Conclusively, as the number of predictors with a non-zero correlation with EBITDA increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence rejects Ho<sub>5</sub>; thus, the DER will significantly determine the Earnings before Interest, Taxes, Depreciation, and Amortization (EBITDA) of quoted manufacturing firms on the Nigerian Stock Exchange.

Table 43 MODEL RESULTS FOR HYPOTHESES 6 – 9(See Appendix 3, Table 43)

As seen in Appendix 3, Table 43

**Hypothesis 6**—The regression coefficient of TSD had a Bonferroni p-value of 0.0000 less than the nominal level (0.05). The table clearly shows that the BAT-adjusted level, based on the number of predictors in the model, differs.

Conclusively, as the number of predictors with a non-zero correlation with DER increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence rejects Ho<sub>6</sub>; thus, the Term Structure of Debt (TSD) will significantly determine the DER of quoted manufacturing firms in the Nigerian Stock Exchange.

Hypothesis 7—The regression coefficient of TSD had a Bonferroni p-value of 0.0024 less than the nominal level (0.05). The table clearly shows that the BAT-adjusted level, based on the number of predictors in the model, differs.

Conclusively, as the number of predictors with a non-zero correlation with Tobin's Q increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence rejects Ho<sub>7</sub>; thus, the Term Structure of Debt (TSD) will significantly determine the firm performance of quoted manufacturing firms in the Nigerian Stock Exchange.

Hypothesis 8—The regression coefficient of ETR had a Bonferroni p-value of 0.0000 less than the nominal level (0.05). The table clearly shows that the BAT-adjusted level, based on the number of predictors in the model, differs.

Conclusively, as the number of predictors with a non-zero correlation with DER increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value. **Decision:** The evidence rejects Ho<sub>8</sub>; thus, the ETR will significantly determine the DER of quoted manufacturing firms in the Nigerian Stock Exchange.

Hypothesis 9—The regression coefficient of ETR had a Bonferroni p-value of 0.1483 greater than the nominal level (0.05). The table clearly shows that the BAT-adjusted level, based on the number of predictors in the model, differs.

Conclusively, as the number of predictors with a non-zero correlation with Tobin's Q increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence fails to reject Ho<sub>9</sub>; thus, the ETR will not significantly determine the performance of quoted manufacturing firms in the Nigerian Stock Exchange.

### Table 44 MODEL RESULTS FOR HYPOTHESES 10 – 14 (See Appendix 3, Table 44)

As seen in Appendix 3, Table 44

**Hypothesis 10** - The regression coefficient of DER\*ETR had a Bonferroni p-value of 0.0000, less than the nominal level (0.05). It is clear from the table that the BAT-adjusted level differs based on the number of predictors in the model.

Conclusively, as the number of predictors with a non-zero correlation with RoA increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence rejects  $Ho_{10}$ ; thus, the ETR will moderate the relationship between the DER and Return on Assets (RoA) of quoted manufacturing firms in the Nigerian Stock Exchange.

**Hypothesis 11** - The regression coefficient of DER\*ETR had a Bonferroni p-value of 0.0001, less than the nominal level (0.05). It is clear from the table that the BAT-adjusted level differs based on the number of predictors in the model.

Conclusively, as the number of predictors with a non-zero correlation with EPS increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence rejects  $Ho_{11}$ ; thus, the ETR will moderate the relationship between the DER and Earnings per share (EPS) of quoted manufacturing firms in the Nigerian Stock Exchange.

**Hypothesis 12** - The regression coefficient of DER\*ETR had a Bonferroni p-value of 0.0000, less than the nominal level (0.05). It is clear from the table that the BAT-adjusted level differs based on the number of predictors in the model.

Conclusively, as the number of predictors with a non-zero correlation with Tobin's Q increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence rejects  $Ho_{12}$ ; thus, the ETR will moderate the relationship between the DER and Tobin's Q of quoted manufacturing firms in the Nigerian Stock Exchange.

**Hypothesis 13** - The regression coefficient of DER\*ETR had a Bonferroni p-value of 0.1665, greater than the nominal level (0.05). It is clear from the table that the BAT-adjusted level differs based on the number of predictors in the model.

Conclusively, as the number of predictors with a non-zero correlation with EBIT increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence fails to reject Ho<sub>13</sub>; thus, the ETR will not moderate the relationship between Debt-to-Equity finance (DER) and EBIT of quoted manufacturing firms in the Nigerian Stock Exchange.

**Hypothesis 14** -The regression coefficient of DER\*ETR had a Bonferroni p-value of 0.0005, greater than the nominal level (0.05). It is clear from the table that the BAT-adjusted level differs based on the number of predictors in the model.

Conclusively, as the number of predictors with a non-zero correlation with EBITDA increases, the BAT-adjusted levels get smaller, indicating that BAT corrects the observed level to be less than the nominal value.

**Decision:** The evidence rejects Ho<sub>14</sub>; thus, the ETR will moderate the relationship between Debtto-Equity finance (DER) and Earnings before Interest, Taxes, Depreciation and Amortisation (EBITDA) of quoted manufacturing firms in the Nigerian Stock Exchange.

# 4.11 Arellano-Bond Test.

The auto-correlation test reports the p-values for the first-order auto-correlation of the firstdifferenced residuals. The other test statistic reported looks at the second-order correlation to test for first-order serial correlation in levels of the error term.

The Arellano-Bond test for auto-correlation has a *null hypothesis of no auto-correlation*. The test results provided for the AR (1) and AR (2) processes are shown in the following Tables.

Table 45: AR Test for Model 1-14 (See Appendix 3, Table 45)

A single table presenting the AR test results for Models 1-14: As seen in Appendix 3, Table 45

# Summary of the Arellano-Bond test.

The Arellano-Bond test results hold significant implications for the validity and applicability of the Difference Generalised Method of Moments (GMM) estimator. It is essential to recognise that the presence of first-order autocorrelation (AR (1)) in the differenced residuals is not only anticipated but also a prerequisite for the estimator's validity. The differencing process inherently introduces first-order serial correlation in the transformed error terms, even when the original errors are uncorrelated.

However, it is critical to emphasise that the Difference GMM estimator imposes a stringent requirement of no second-order autocorrelation (AR (2)) in the differenced residuals. The identification of significant AR (2) autocorrelation would raise serious doubts about the validity of the moment conditions employed by the estimator and the suitability of the instruments used. When analysing the test results, two distinct scenarios should be considered:

- If the null hypothesis is rejected for AR (1) but not for AR (2), it suggests the existence of first-order autocorrelation in the differenced residuals, while there is no indication of secondorder autocorrelation. This outcome is consistent with the assumptions underlying the Difference GMM estimator and supports its applicability.
- 2. If the null hypothesis is rejected for both AR (1) and AR (2), it implies the presence of both first order and second order autocorrelation in the differenced residuals. This scenario contravenes the assumptions of the Difference GMM estimator and raises concerns about the validity of the moment conditions and the appropriateness of the instruments employed.

In conclusion, the rejection of the null hypothesis for AR (1) is not only expected but also essential for the Difference GMM estimator to be valid. I hope this explanation helps to elucidate the crucial aspects surrounding the applicability of the Difference GMM estimator when there is evidence of first-order autocorrelation (rejecting the null for AR (1)) but no indication of second order auto-correlation (failing to reject the null for AR (2)). I apologize for any confusion caused by my previous response.

#### Further explanation:

• The m-statistic is the test statistic calculated to check for autocorrelation. It follows an asymptotic normal distribution. The more negative the m-stat value, the stronger the indication of autocorrelation at that lag order.

- The rho coefficient represents the estimated autocorrelation coefficient essentially quantifying the degree/strength of auto-correlation if the m-stat indicates significance.
   Higher absolute rho values indicate stronger auto-correlation.
- The SE (standard error) of rho measures the precision around the rho autocorrelation estimate. Lower SEs mean more precision.
- The Prob value tests the statistical significance of the m-statistic against the null hypothesis of no auto-correlation. Prob values below the chosen significance level (e.g. 0.05) indicate the presence of significant auto-correlation.
- We can see differences in results across the five models you have constructed. For example,
  Model 1 shows a significant AR(1) autocorrelation but an insignificant AR(2), while Model
  3 has significant autocorrelation at both AR lags.
- We can compare results across models. For example, Model 7 shows the strongest evidence of AR (1) auto-correlation based on the highly significant m-stat and higher rho.
- Model 6 does not have as strong auto-correlation at either order compared to the other models.
- In general, significant m-stats and low Prob values flag issues with auto-correlated errors in that time-series model.
- Where significant auto-correlation exists, the table also provides rho an estimate of the auto-correlation coefficient, reflecting the strength/degree.
- We can use these results to compare autocorrelation behaviours across models. For example, Model 12 shows the most significant issues - with residuals correlated both with 1-period prior and even 2-period prior errors.
- Model 13 demonstrates the overall least concerns regarding auto-correlation based on the stats.

### 4.12 Summary

This chapter has presented a comprehensive analysis of the data gathered from non-financial companies listed on the Nigerian Stock Exchange, shedding light on the intricate relationships among capital structure, corporate tax strategies, and firm performance. The empirical findings, derived from a rigorous application of panel data techniques and robustness checks, have yielded valuable insights into the dynamics at play within the Nigerian manufacturing sector.

The correlation matrix revealed significant associations among key performance indicators and predictor variables, setting the stage for a more in-depth examination of the hypothesised relationships. The regression analyses provided compelling evidence for the positive impact of the debt-to-equity ratio on various performance metrics, including return on assets, earnings per share, Tobin's Q, and EBIT. However, the relationship between the debt-to-equity ratio and EBITDA proved to be negative, suggesting that higher financial leverage may hamper overall operating performance when accounting for non-cash charges.

The moderating role of the effective tax rate in the relationship between capital structure and firm performance was also scrutinised. While the interaction effects were not consistently significant across all models, the findings underscore the importance of considering tax implications when formulating financing strategies. The robustness tests, employing alternative estimators and diagnostic checks, lent credence to the validity and reliability of the main results.

Furthermore, the incorporation of worldwide governance indicators into the analysis provided a nuanced understanding of how institutional factors shape the interplay between debt utilisation, tax obligations, and corporate outcomes. The Bonferroni adjustment and Arellano-Bond test further validated the models' statistical significance and auto-correlation assumptions.

In conclusion, this chapter has uncovered compelling evidence for the impact of capital structure and tax avoidance on the financial performance of Nigerian manufacturing firms, contributing to the advancement of corporate finance theory and practice in the sub-Saharan context.

#### Chapter 5

#### **5.0 Discussion of Findings.**

This chapter presents the statistical output from the analysed data from the non-financial sector of 66 companies listed on the floor of the Nigerian Stock Exchange (NSE) over 10 years from 2011 to 2020. The nature of the data focused on the capital structure parameters, the performance parameters, the tax parameters and the market value of the firm's assets replaceable costs measured as Tobin's Q. Thus, for the analysis, data extracted were from 66 firms of nine non-finance sectors accounting for 10 years from 2011 to 2020. The capital structure parameter was the DER. The performance parameters were Tobin's Q (TQ), RoA, Earning per-Share (EPS), EBIT and Earnings before Interest, Tax, Depreciation and Amortisation (EBITDA). In contrast, the moderating parameter is the ETR. The study equally considered the Term Structure of Debt (TSD).

General method regression statistical tool was adopted via the linear model which was to regress all data without segregation and afterwards deployed to forecast the predictability effects of the predictors and the moderating effects of the moderator variable. The analysis was approached in five (5) stages producing five model results which were analysed. First, the relationship among variables of the study was established as indicated in the correlation matrix (see Table 1) while in the second stage; the predictive effects of DER on the performance parameters (RoA, Tobin's Q, EPS, EBIT, EBITDA) were established (via Tables 2-6). In the third and fourth stages, the predictive effects of TSD and ETR were tested on DER and RoA (as in Table 7-8 and 9-10) respectively. The fifth stage explored the moderating effects of ETR on the relationship between DER and the performance parameters (RoA, Tobin's Q, EPS, EBIT, and the performance parameters (RoA, Tobin's Q, EPS).

Furthermore, panel data analysis was equally conducted to establish effects with and without control variables using three estimation techniques, OLS, FEM and REM which produced six results for each hypothesis. Finally, the Hausman test (HST) was utilised to confirm the suitability of the models. The result equally provided a brief interpretation of the result below each of the tables. This was to enable the researcher to evaluate firm-specific variables that account for consistent heterogeneity across time, resulting in an efficient outcome (Demirg-Kunt *et al.*, 2020; Mehzabin *et al.*, 2023). The data had some missing observations, and employed six models to analyse each hypothesis as follows: pooled OLS (with and without CVs); FEM (with and without CVs); and REM (with and without CVs) (Mamaro&Legotlo, 2020; Nazir, Azam& Khalid, 2021; Pandey & Sahu, 2019). In the Nigerian context, for instance, Alhassan (2021) used FEM while Abdullahi *et al.* (2023) utilised the REM. However, to confirm suitability, the Hausman test (HST) was used. Several CVs are employed in the models: FS, AGE, SG, BS, and MTB.

Additionally, to confirm the suitability of model parameters the Variance Inflation Factor Test was conducted (Pandey & Sahu, 2019). VIF also checks the presence of multicollinearity among the IVs. The sequence of steps was as follows; first, descriptive properties of the data were analysed; second, correlation analysis was performed; next was VIF, all model regression followed by the HST tests. Given the variety of tactics used in the literature, to identify the most appropriate estimating methodologies, the application of the OLS, the fixed effect and random effect models as regressions models. The study estimated the fittest model using the HST after the three-panel data estimations.

		Tobin's Q	ROA	EBITDA	EBIT	EPS	PAT	TSD	ETR	DER
Tobin's Q	Pearson's r	-								
	p-value									
ROA	Pearson's r	0.276 ***	-							
	p-value	< .001	1.0							
EBITDA	Pearson's r	-0.017	0.243 ***							
	p-value	0.646	< .001	_						
EBIT	Pearson's r	0.163 ***	0.622 ***	0.222 ***						
	p-value	< .001	< .001	< .001	_					
EPS	Pearson's r	0.241 ***	0.255 ***	-0.003	0.144 ***	_				
	p-value	< .001	< .001	0.942	< .001					
PAT	Pearson's r	0.102 **	0.242 ***	0.070	0.149 ***	0.477 ***				
	p-value	0.006	< .001	0.061	< .001	< .001				
TSD	Pearson's r	0.064	0.087*	-0.003	0.011	0.088*	0.031			
	p-value	0.088	0.020	0.928	0.767	0.019	0.402			
FTD	Pearson's	0.040	-0.022	0.015	-0.014	0.027	0.018	-0.028		
	p-value	0.290	0.548	0.682	0.707	0.470	0.632	0.459	-	
DER	Pearson's r	0.298 ***	0.693 ***	-0.127 ***	0.427 ***	0.311 ***	0.258 ***	0.079*	-0.044	
	p-value	< .001	< .001	< .001	< .001	< .001	< .001	0.035	0.242	

Table 46: Correlation matrix for all variables showing the relationship among variables of the study (See Appendix 3, Table 46)

Note. \* p < ..05, \*\* p < .01, \*\*\* p < .001

The correlation matrix in Table 46 shows a significant relationship between the predictor variable (DER) and the dependent variables. The significant relationship was flagged off at p < .001 as follows: DER and Tobin's Q = .29, DER and RoA = .69, DER and EPS = .31, DER and EBIT = .43, and DER and EBITDA = .13. Elsewhere the relationship between term structure of debt (TSD) expressed as either long-term or short with DER was significant at r = .08, p < .05 but between TSD and Tobin's Q wasn't significant (r = .06, p > .05). Also, the correlation matrix revealed that ETR has a negative but insignificant relationship with DER 312
and at r = -.04, p > .05 and r = -.02, p > .05 respectively. Thus, the correlation matrix confirmed that the variables of the study have varying degrees of relationship among them, providing the basis for texting higher relationship effects using the predictor model.

Table 47: Model coefficients showing the predictive effects of DER on RoA, Earning per share (EPS), Tobin's Q, EBIT and Earnings before interest, tax, depreciation and amortisation (EBITDA) as performance parameters. (See Appendix 3, Table 47) This table presents results from regression models examining the predictive effect of a company's DER on various measures of financial performance.

The key findings are:

- **RoA**: A one-unit increase in DER is associated with a 2.12-unit increase in Return on Assets (RoA), controlling for other factors (p<.001). This suggests higher financial leverage is associated with higher profitability as measured by RoA.
- EPS: A one-unit increase in DER is associated with a 0.41 unit increase in Earnings per share (EPS), controlling for other factors (p<.001). So higher debt levels relative to equity are associated with higher EPS.
- Tobin's Q: A one-unit increase in DER is related to a 0.0834 unit increase in Tobin's Q, a measure of a firm's market valuation relative to asset replacement costs (p<.001). This indicates the market responds positively to a higher DER through increased valuation.</li>
- EBIT: A one-unit DER increase is associated with a 2.39 unit increase in EBIT, controlling for other factors (p<.001). This reinforces the finding that higher leverage increases profitability.

• EBITDA: However, DER has a negative relationship with Earnings Before Interest, Taxes, Depreciation and amortization (EBITDA), with a one-unit increase associated with a 9.29unit decrease (p<.001). This may reflect that higher debt servicing costs can overcome higher operating profits at high leverage levels.

The results presented in Table 47 demonstrate a statistically significant positive relationship between DER and return on assets (RoA) ( $\beta = 2.12$ , p < .001). This confirms Hypothesis 1, that higher DER will predict increased RoA. Conceptually, this finding suggests that as firms listed on the Nigerian stock exchange raise their proportion of debt financing relative to equity, they tend to achieve higher returns from their investments in assets. However, high leverage from excessive debts also riskily exposes firms to default if interest expenses and liabilities overwhelm operating profits. Nonetheless, within reasonable limits, a judicious debt policy that is sustainable can be an engine for growth. This result aligns with the capital structure theory which models an upside to higher leverage but cautions against excessive borrowing where costs outweigh benefits.

Overall, these results have meaningful implications. The data indicates firms can prudently utilise debt to fuel RoA performance, hinting at competitive advantages from fiscal factors often overlooked operationally. However, debt necessitates its infrastructure – reliable cash flows for coverage, active monitoring of covenants, strategic maturity staggering, and contingency credit reserves. Integrating these best practices of working capital around debt tranches tailored to asset life cycles can serve as a value-creation mechanism. In summary, these findings highlight the potential for debt policy to function as a value driver, while underscoring prudent governance so higher DER translates to RoA enhancement. Both researchers and directors studying Nigeria's capital markets can draw insights from the

demonstrated relationship between financial structure dynamics and asset productivity.

The results in Table 2 further demonstrate that the DER significantly predicts earnings pershare (EPS) in a positive direction ( $\beta = 0.41$ , p < .001), confirming Hypothesis 2. This indicates that as firms increase their DER, within reasonable limits, investors can expect to achieve higher EPS accordingly. Conceptually, judicious leveraging allows companies to access greater capital resources for generating profits and shareholder returns. However, imprudent amounts of high-risk debt could conversely jeopardize solvency. Therefore, an optimal capital structure balancing debts and equity exists, allowing firms to magnify EPS while sustaining operations. These findings contribute to the discourse on balancing fiscal discipline with profitable risk-taking. Directors can reference these results when evaluating the merits of higher DER for improving investor earnings while monitoring cash flows and covenants vigilantly.

Additionally, DER exhibits a predictive capacity for Tobin's Q as well, with a significant positive coefficient ( $\beta = 0.08$ , p < .001), affirming Hypothesis 3. Essentially, Tobin's Q indicates a firm's market valuation relative to the replaceable costs of its assets, signalling investor expectations of future performance. Therefore, higher leverage appears associated with heightened market confidence, up to reasonable debt loads aligned with sector averages. However, amplified DER beyond sustainable thresholds could undermine stability. Also, within prudent parameters, increases in DER may boost both EPS and market capitalisation valuations. However, excessive debt without commensurate assets or earnings can erode investor perceptions. These findings highlight how capital structure factors indirectly, yet meaningfully, influence perceptions of corporate prospects reflected through valuation. Both executives and researchers can gain relevant insights on fiscal policy's impact on profitability

and market standing from these documented relationships between DER and key performance indicators.

The results in Table 2 demonstrate DER as a significant positive predictor of EBIT ( $\beta = 2.39$ , p < .001), confirming Hypothesis 4. Conceptually, this suggests that within reasonable limits, increasing financial leverage enables firms to access capital that can be deployed productively to boost profits. However, excessive unmanaged debts could also overwhelm earnings with interest and risk expenses before tax considerations. Therefore, optimising capital structure to balance risks and returns is key for firms seeking to leverage DER to improve profitability. Directors can adjust debt tranches and equity offerings to achieve an equilibrium where fiscal policy sustains operations yet magnifies income streams. These results empirically highlight the advantages of fiscal planning in profit trajectories across industries.

Conversely, the findings show DER negatively predicting earnings before interest, taxes, depreciation and amortisation (EBITDA) ( $\beta$  = -9.29, p < .001), supporting Hypothesis 5. As mounting debts accrue interest owed, a widening DER may hamper firms' ability to cover obligations, reflecting in declining accrual earnings. However, rebalancing equity positions through recapitalisations could reverse this detrimental effect on EBITDA. In essence, these documented relationships showcase DER's predictive capacity in both directions. Within moderation, higher DER can lift pre-tax earnings, but unchecked proliferation of liabilities can undermine comprehensive accrual profits. Corporate directors can apply these insights on fiscal policy's potential while monitoring excessive imbalances. Overall, the empirical evidence presented highlights the dualities of debt - fuel for growth or seeds of instability - depending on governance. Both practitioners and academics can further explore these dynamics through additional research on boundary conditions and optimisation models.

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Table 48 Model coefficients showing the predictive effects of the Term Structure of debt (TSD) on DER and the Term Structure of debt (TSD) on Tobin's Q.

Model Coefficient Predictor – Term structure of debt (TSD) (See Appendix 3, Table 48) The key findings are:

- TSD predicting DER: A one-unit increase in TSD is associated with a 0.86-unit increase in DER, controlling for other factors (p=0.035). This indicates that companies utilising more long-term debt financing tend to have higher overall debt levels relative to equity.
- TSD predicting Tobin's Q: A one-unit increase in TSD is associated with a 0.195-unit increase in Tobin's Q, though this is marginally significant (p=0.088). This suggests the market responds slightly positively to longer-term debt financing through higher valuation, but the evidence is weak.

The results in Table 3 indicate that the term structure of debt (TSD) significantly and positively predicts DER ( $\beta = 0.86$ , p < .05), providing support for Hypothesis 6. This suggests that as firms take on more long-term debt obligations, their overall debt leverage position tends to increase relative to equity over time. Conceptually, the continual accumulation of bonds, notes, and other long-maturity debts onto the balance sheet will structurally elevate the DER, unless offset by equity growth. Therefore, corporate treasurers and CFOs should factor in existing TSD when evaluating additional debt financing modelling projected DER impacts across liability tenures. While term loans or bond issuances may bring strategic flexibility, the residual debts could risk overleveraging without equity expansions. Monitoring shifts in capital mix dynamics as short-term credits roll over into cumulative long-term tranches allows for more

proactive rebalancing.

However, the predictive relationship between TSD and Tobin's Q is insignificant ( $\beta = 0.19$ , p > .05), providing no evidence to support Hypothesis 7 in this sample. This implies that debt duration alone does not directly influence market valuation ratios, although it contributes to leverage. Therefore, other fiscal factors likely play a greater role in the perception of corporate financial stability affecting valuations. Also, while TSD significantly alters the inner capital structure, its external signal to equity markets seems less impactful within these data limitations. Further research into contingent and non-linear effects could improve the understanding of boundary effects from excessive long-term debts. However, this documented linkage between debt tenure and leverage positions provides a meaningful reference for directors weighing financing options.

Table 49: Model coefficients showing the predictive effects of Effective tax rate on Debt-toequity ratio and Tobin's Q

Model Coefficient Predictor: Effective tax rate (See Appendix 3, Table 49).

The key findings are:

- ETR predicting DER: The model shows no significant relationship between ETR and DER (p=0.423). A 1-unit change in ETR only relates to a -0.0272 change in DER. This suggests a company's tax rates do not directly influence capital structure decisions on leverage.
- ETR predicting Tobin's Q: Similarly, no significant relationship was found between ETR and market valuation metric Tobin's Q (p=0.521). A one-unit ETR change only predicts a -0.00609 change in Tobin's Q. So tax rates seem unrelated to market

capitalisation.

The results in Table 4 show no significant predictive relationship between ETR and DER ( $\beta$  = -0.03, p > .05). This provides no support for Hypothesis 8, that ETR can directly predict variation in capital structure related to leverage. While a negative coefficient exists, implying that higher tax rates could deter debt issuances, this sample's association is statistically negligible.

Conceptually, this suggests a firm's tax minimisation strategies and relative tax burden do not necessarily translate to strict financing decisions around creditor or investor capital mixes. Many complex factors likely mediate ETR's effect, if any, on debt policy. Unless tax unevenness manifests in operating cash flows, overall leverage ratios appear somewhat insulated.

Similarly, ETR fails to significantly predict Tobin's Q in this data ( $\beta = -0.006$ , p > .05), providing no evidence for Hypothesis 9. Again, while higher tax obligations could nationally pressure valuations, such tax rates do not significantly inform market capitalisation on their own. This implies external perceptions depend on gauging true profitability and adjusting for tax impacts. In summary, despite conceptual tax motivations around financing choices, effective tax rates demonstrate no direct predictive capacity for capital structure and valuation metrics in this sample. Taxes remain crucial considerations but likely operate indirectly through profit and reinvestment channels affecting growth prospects rather than formal debt policy alone. Disentangling these complex pathways could clarify the limited findings observed here.

Table 50: Model coefficients showing the moderation effects of ETR on the relationship between DER and RoA, DER and Earnings-per-share (EPS), DER and Tobin's Q, DER and EBIT, and DER and Earnings before interest, tax, depreciation and amortisation (EBITDA). (See Appendix 3, Table 50)

The key findings are:

- ETR significantly moderates (weakens) the positive DER-RoA relationship (DER*ETR*ROA coefficient = -0.1347, p < 0.001). This implies that higher tax rates interfere with the increasing profitability gains from higher leverage previously observed.
- The weakening moderation effect also emerges for DER's positive relationship with Tobin's Q (-0.0077, p = 0.003) and EBIT (-0.137, p = 0.005). Again, higher taxes appear to restrict the degree of valuation and profit enhancement resulting from elevated DER.
- However, for EPS (p=0.088) and EBITDA (p=0.541), no significant moderation is detected, indicating tax rates do not necessarily impose meaningful limitations between DER and these metrics.

The results in Table 5 demonstrate that ETR significantly moderates the positive relationship between DER and return on assets (RoA) ( $\beta$  = -0.1347, p < 0.001). This interaction effect supports Hypothesis 10, that higher ETR rates will restrain the degree to which increased DER enhances RoA. Conceptually, mounting tax obligations appear to divert operating profits towards government payments rather than corporate reinvestments, limiting the performance upside from financial leverage. Therefore, elevated ETRs represent an additional liability claim on gross income alongside interest expenses from higher debts. Firms optimising capital 320 structure to balance risks and returns must factor both considerations simultaneously based on this documented moderation. Seeking tax relief avenues even amidst growth-oriented leverage policies could offset interacting constraints.

However, ETR shows no significant moderating effect between DER and earnings per share (EPS) ( $\beta = -0.0205$ , p > 0.05). Thus, Hypothesis 11 is unsupported, as tax rates do not seem to condition the relationship between capital structure and investor rewards. The lack of interaction aligns with the earlier finding that DER did not independently predict EPS either. This suggests far more complex pathways operate between financing decisions and dividend payouts than direct mediation. In essence, while taxes demonstrably siphon off some profit gains from leverage, shareholder returns follow an alternative calculus. Both researchers and corporate strategists should note that tax implications manifest distinctly across performance metrics – restricting asset productivity but not investor distributions. Further disentangling these nuances could uncover optimisation pathways hidden within the financial architecture.

The results in Table 5 further demonstrate that the ETR significantly moderates the positive relationship between the DER and Tobin's Q ( $\beta = -0.0077$ , p < 0.05). This aligns with Hypothesis 12, as the taxation effects constrain the degree to which leverage predicts market valuation, given that taxes divert potential gains. Conceptually, while higher DER elevated growth prospects, mounting tax rates proportionally temper the degree of capitalised expectations.

Similarly, ETR exhibits a negative moderation effect between DER and EBIT as well ( $\beta = -0.137$ , p < 0.05). Though ETR did not independently predict EBIT, the interaction effect supports Hypothesis 13. Essentially taxes appear to restrict how much incremental profitability

can manifest from higher debts before fiscal obligations are netted. So alternative tax relief strategies could prevent this partial offset. Finally, the moderation also emerges in the relationship between DER and earnings before interest, taxes, depreciation and amortisation (EBITDA) ( $\beta$  = -2.554, p < 0.05). Though the association between ETR and EBITDA is insignificant, taxes still absorb some degree of performance gains from financial leverage. This offers further empirical evidence that rising ETRs scale back upside across profitability indicators through interaction effects.

In summary, mounting tax rates consistently exhibit a dampening influence on positive debtdriven financial performance, even if tax obligations do not directly predict metrics themselves. Researchers and CFOs should note taxes operate as an undisclosed liability on leverage capabilities. Seeking counterbalances through reinvestment incentives or shielding could sustain higher optimisation equilibriums. Finally, the results in Table 5 show that ETR significantly moderates the relationship between DER and earnings before interest, taxes, depreciation and amortisation (EBITDA) in the negative direction ( $\beta = -2.554$ , p < 0.05). This interaction effect provides support for Hypothesis 14. While ETR did not independently predict EBITDA itself, the two variables combined to restrict the performance-enhancing effects of higher DER. Essentially, mounting tax rates scale back the degree to which debt-funded growth translates to bottom-line earnings before fiscal obligations are netted.

Conceptually, this suggests that from an integrative perspective, deficits in one area (high taxes) can constrain capabilities in another (leverage). Even as DER elevated profit potential, higher ETRs counterbalanced those capacity gains. Firms should consider synergistic tax, debt, and growth policies in unison. In summary, the empirical evidence showcases the

interconnectedness of key financial drivers across functional domains. Seeking holistic efficiencies across capital structure, asset utilisation, and cost management can raise collective equilibrium beyond siloed efforts in any single metric. Researchers and strategists would do well to examine system dynamics rather than linear causality across predictors.

#### 5.2 Capital Structure and Firm Performance

Numerous scholars have underscored the significance of capital structure in a firm's performance (Dao & Ta, 2020; Islam & Iqbal, 2022; Mubeen *et al.*, 2020). This section discusses the results where the debt-to-equity ratio was used IV, and the DVs were RoA, EPS, Tobin's Q, EBIT and EBITDA. Next is when TSD is used as IV on the DVs, i.e., DER and FP, and ETR is used as IV on the DVs, i.e., DER and FP. Lastly, the results show that the ETR is used as a moderator on the DVs, i.e., RoA, EPS, Tobin's Q, EBIT, and EBITDA. Dao and Ta (2020) carried out a meta-analysis by reviewing publications, which covered the years 1998 to 2019. They substantiated that more than 40% of the studies used OLS, while FEM was used in roughly 30% of cases. Out of the studies, 26% used the REM, and 3% employed GMM as their estimating method. Numerous authors employ a mix of different techniques in several empirical research (Abdullah &Tursoy, 2021; Islam & Iqbal, 2022).

This part is organised as follows: first, the tests for determining estimating strategies; next, the findings of such estimation methods as indicated by the results. Last, we discuss the context of the literature and related theories in the final section.

### **5.3 Specification Test Results**

The Hausman specification test (HST) is used in this study to choose between the FEM and REM. The null hypothesis is that REM is to be preferred over FEM. Six estimation models are

used for each of the hypotheses in this study. The models were estimated via REM first, with CVs and without CVs as previously stated. The results of the HST are shown in the Table 4.5.1:

Table 51: HST summary for hypotheses 1-5(See Appendix 3, Table 51)

The Hausman specification test indicates rejection of the null hypothesis for the earnings-pershare (EPS) and EBIT models without control variables. Additionally, the null is rejected across all models when incorporating control variables and estimating through DER.

Based on these results, the REM appears preferable to the FEM for return on assets, EPS, EBIT, and EBITDA when including control variables. However, for Tobin's Q, the test suggests retaining the FEM specification. By applying the Hausman test findings, decisions can be made regarding the most suitable model for hypothesis testing. The identified REM and FEM specifications help control unobserved heterogeneity while evaluating the hypothesized predictive relationships. Comparing estimates across models provides robustness while accounting for potential omitted variable bias through fixed and random effects. In summary, the Hausman specification test provides an empirical basis for model selection to improve causal inference and generalisability in analysing the predictors across differing performance metrics.

Table 52: HST summary for hypotheses 6-9 (See Appendix 3, Table 52).

The Hausman specification test indicates rejection of the null hypothesis for the DER and Tobin's Q models without control variables. With control variables incorporated, the null hypothesis is again rejected for the same DER and Tobin's Q specifications. Based on these consistent results across both main effect and controlled models, the REM appears preferable to the FEM for estimating relationships with DER and Tobin's Q as outcome variables. This suggests some degree of time-invariant unobserved heterogeneity is likely present.

By applying the Hausman test's guidance, decisions can be made regarding the appropriate models for evaluating the hypotheses predicting DER and Tobin's Q. The identified REM specifications help control for omitted variables bias while assessing the hypothesised debt and valuation relationships. In essence, the test provides an empirical basis for selecting between fixed and random effects estimations when analysing capital structure and market performance indicators. Comparing estimates across chosen models then allows for strengthened causal inference and generalizability.

Table 53: Moderation HST summary for hypotheses 10-14 (See Appendix 3, Table 53).

The Hausman specification test results support rejecting the null hypothesis for the return on assets (RoA) model, both with and without control variables. This indicates the presence of unobserved heterogeneity bias, making fixed effects preferable to random effects estimation for analysing the debt-RoA relationship. Additionally, tests on the remaining performance indicators - earnings per-share, Tobin's Q, earnings before interest/tax, and EBIDTA - favour random over fixed effects specifications when including control variables.

By applying this empirical evidence from the Hausman test, appropriate estimator selection for the hypothesised relationships can be guided by the data itself. The identified fixed versus random effects specifications account for potential omitted variables bias, strengthening causal inference when evaluating predictive links between capital structure and various performance metrics. In essence, the test provides data-driven model fit decisions tailored to each financial measure as the dependent indicator of interest. Leveraging these findings allows for enhanced rigour and accuracy when assessing the hypothesised debt and tax effects on profitability and 325 valuations. The differential test outcomes highlight the relevance of dimension-specific inquiry, resisting generalisation.

Table 54: REM summary for Hypotheses 1-2 (See Appendix 3, Table 54)

Table 55: FEM summary for Hypothesis 3(See Appendix 3, Table 55).

The Table shows the estimation results of the models additionally incorporating the CVs. The findings of HST  $\chi^2$ Statistic showed that REM should be used for RoA, EPS, EBIT and EBITDA, while FEM should be used for Tobin's Q. The FEM result is summarised in the Table above.

Table 56: REM summary for hypotheses 4-5 (See Appendix 3, Table 56).

Table 57: REM summary for hypotheses 4-5 (See Appendix 3, Table 57).

Table 58: FEM summary for hypotheses 6-7 (See Appendix 3, Table 58).

Table 59: REM summary for hypotheses 8-9 (See Appendix 3, Table 59).

Table 60: FEM summary for hypothesis 10 (See Appendix 3, Table 60).

The Table as seen in appendix 3, shows the estimation results of the FEM for model 10 additionally incorporating the CVs. The findings of HST  $\chi^2$ Statistic showed that FEM should be used for RoA and the moderator ETR.

Table 61: REM summary for hypotheses 11-12 (See Appendix 3, Table 61).

In Table 61, we have employed a random effects model (REM) to examine the potential moderating influence of the effective tax rate (ETR) on the association between the debt-to-equity ratio (DER) and two distinct dependent variables: earnings per share (EPS) and Tobin's Q. The empirical findings demonstrate that DER exerts a statistically significant positive effect on both EPS ( $\beta = 0.217434$ , p < 0.01) and Tobin's Q ( $\beta = 0.062685$ , p < 0.01). Conversely, ETR exhibits a statistically significant negative impact on EPS ( $\beta = -0.00507$ , p < 0.01) but not on Tobin's Q ( $\beta = -0.0009$ , p > 0.05). The interaction term between DER and ETR (DER\*ETR) is statistically significant and negative for both EPS ( $\beta = -0.00081$ , p < 0.01) and Tobin's Q ( $\beta = -0.00024$ , p < 0.01), suggesting that ETR moderates the relationship between DER and these performance indicators. The control variables, encompassing firm size (FS), age, sales growth (SG), board size (BS), and market-to-book ratio (MTB), do not exhibit statistically significant effects on either EPS or Tobin's Q.

Table 62: REM summary for hypotheses 13-14(See Appendix 3, Table 62).

Table 62 presents the results of an additional REM analysis investigating the potential moderating effect of ETR on the relationship between DER and two alternative dependent 327

variables: earnings before interest and tax (EBIT) and earnings before interest, taxation, depreciation, and amortisation (EBITDA). The empirical findings reveal that DER exerts a statistically significant positive impact on EBIT ( $\beta$  = 2.219291, p < 0.01) but a statistically significant negative impact on EBITDA ( $\beta$  = -20.4621, p < 0.01). ETR does not exhibit a statistically significant direct effect on either EBIT ( $\beta$  = -0.00174, p > 0.05) or EBITDA ( $\beta$  = 0.096054, p > 0.05). However, the interaction term between DER and ETR (DER\*ETR) is statistically significant and positive for EBITDA ( $\beta$  = 0.068993, p < 0.01) but not for EBIT ( $\beta$  = 0.001016, p > 0.05). This indicates that ETR moderates the relationship between DER and EBITDA but not between DER and EBIT. Among the control variables, only firm size (FS) exhibits a statistically significant positive effect on EBIT ( $\beta$  = 2.18, p < 0.05), whilst the other control variables do not demonstrate statistically significant effects on either EBIT ( $\beta$  = 2.18, p < 0.05), whilst the other control variables do not demonstrate statistically significant effects on either EBIT ( $\beta$  = 2.18, p < 0.05), whilst the other control variables do not demonstrate statistically significant effects on either EBIT of EBITDA.

#### 5.4 Test Results and Prior Studies.

The empirical models in this Nigerian study demonstrate explanatory capabilities for factors influencing corporate performance largely consistent with past findings. The achieved predictive capacity ranged from 41.4% for return on assets to just 3.3% for earnings per share, 14.6% for earnings before interest and taxes, 2.0% for earnings before interest, taxes, depreciation and amortisation, and 49.7% for Tobin's Q. Alignment emerge across multiple studies on Nigerian capital markets - Alhassan (2021) attained 43.4% visibility on returns, while Abdullahi *et al.* (2023) reached 17.3% explanatory power. Within the broader developing country landscape, Khan (2012) and Abbas *et al.* (2013) secured predictive traction from 3-6% on Pakistani data.

While the exact degree of explanatory relevance varies across specific performance measures modelled, the consistent significance and directionality suggest meaningful relationships between capital structure factors and eventual profitability. However, divergent findings across indicators showcase the complexity in these connections - debt and equity configurations unpredictably enhance or impair metrics depending on operating contexts. Therefore, optimising the financing mix as a strategic priority remains crucial yet contingent. Firms must weigh capital costs and risks of debt against the stability of equities across cycles. Prioritising liquidity or growth positions at different maturity stages further clouds universal policies. Still, the demonstrated linkages empirically reaffirm capital structure choices as pivotal drivers.

The REM results showed that DER had a positive effect on RoA and EPS; this supports hypotheses one and two as follows:

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- H<sub>1</sub>: The debt-to-equity ratio will significantly determine the RoA of quoted manufacturing firms in the NSE.
- *H*<sub>2</sub>: The debt-to-equity ratio will significantly determine the EPS of quoted manufacturing firms in the NSE.

H1, stating that the DER positively predicts return on assets (RoA), is supported. Conceptually, a moderate level of debt provides additional capital for investments to strengthen infrastructure and operating capacity, reflected in RoA gains. Aligning with this, Alhassan (2021) also found a positive DER association with RoA and EPS in Nigeria. However, contradicting results were reported by Abdullahi *et al.* (2023) showing the negative linkage between leverage and profitability. Across wider African and Asian countries, findings remain mixed - Bui *et al.* (2023) in Jordan and Boshnak (2023) in Saudi Arabia support debt bolstering RoA, as did Abdullah and Tursoy (2021). But Mehzabin *et al.* 's (2023) multicountry Asian study aligns with Ahmed *et al.* (2023) in Jordan, where higher DER corroded RoA. Debt's impacts also undermined EPS in Iran per Ahmed *et al.* (2023). Yet Mehzabin *et al.* (2023) importantly noted debt funding can improve bottom-line profits if deployed into income-generating avenues. This aligns with pecking order theory - those prudent leveraging fuels growth while mitigating risks.

In essence, evidence on DER outcomes remains contingent on governance and reinvestment effectiveness surrounding capital deployment. Within appropriate boundaries, debt policy seems capable of serving as a strategic value enhancer, warranting deeper investigation.

Additional evidence on debt's upside emerges in the Nigerian context - Okore and Nwadiubu (2022) found favourable debt-to-equity effects on return measures in food and beverage firms.

Through panel data spanning 1998-2002, Etale (2020) revealed positive linkages between debt and ROE among Nigerian listed firms. This suggests that businesses relying on greater leverage achieve superior shareholder returns. Likewise, Orji and Agubata (2021) demonstrated a significant positive debt-equity influence on corporate performance at the 5% significance level. The associated tax benefits provide one explanatory channel - interest expensing lowers taxable profit burdens, enhancing retained income usable for lifting return on assets.

These RoA upticks are further mirrored by Mamaro and Legotlo (2020) in South Africa, where total debts strongly predicted financial returns. Among Nigerian energy sector firms, Eriki and Osagie (2017) equally found debt ratios elevating performance through fixed effects modelling. Taken together, the mounting evidence makes a case for calibrated debt policies providing cost of capital and tax advantages that overshadow risks, thereby supplying capital for asset productivity enhancements. However, contingency factors likely bound optimal leverage before reversing gains completely. Identifying the cusp between growth fuel versus instability sources remains imperative. In contrast, Tajudeen *et al.* (2021), their investigation focused only on the pharmaceutical industry in Nigeria focusing on firms listed on Nigeria's stock exchange between 2009 and 2017. The findings show that there is no indication of a substantial relationship between the capital structure and the performance of Nigerian pharmaceutical companies. Still focusing on negative evidence, Nelson and Peter (2019) did an empirical analysis of the effect of capital structure on the firm performance of microfinance banks in Nigeria from 2009 to 2018. According to the findings, there is a negative and insignificant correlation between the debt-to-equity ratio and ROE.

Li (2020) using panel data from listed companies in the automobile industry during the years from 2011 to 2019 confirmed that there was a negative relationship between STDR, long-term debt ratio (LTDR), and as independent variables with the firm performance which was measured by RoA. In another study, Aziz and Abbas (2019) from a sample of firms from fourteen sectors of Pakistan Stock Exchange. The analysis of data indicated that TDTA had a negative insignificant relationship with EPS at1%.

H<sub>2</sub> supports DE's beneficial impact on EPS. A firm can boost its earning potential by employing debt finance. The extra earnings may have a favourable effect on EPS if the company can outperform its borrowing costs on the return on its assets. Moreso, debt financing can avail firms more money to buy back their shares. The corporation can theoretically increase the EPS for remaining shareholders by distributing its earnings to a smaller base through a reduction in the number of outstanding shares.

The FEM results showed that DER had a positive effect on Tobin's Q; this supports hypotheses three as follows:

*H*<sub>3</sub>: Debt-to-equity ratio will significantly determine Tobin's Q of quoted manufacturing firms in the NSE.

H<sub>3</sub> supports DE's beneficial impact on Tobin's Q. In comparison to equity financing, a company's cost of capital is usually cheaper when it employs debt financing. Debt financing allows a company to invest in opportunities, such as research and development, or acquisitions, which can lead to increased profitability. If these investments result in higher earnings, it can have a positive effect on Tobin's The findings are supported by Boshnak (2023) in Saudi

Arabia; Bui *et al.* (2023) in Vietnam; and Ahmed *et al.* (2023) in Iran. However, the finding is not consistent with Ronoowah and Seetanah (2023) in Mauritius and Sharkh *et al.* (2022) in Jordan which finds a negative association between DER and Tobin's Q. The positive association is also trade-off theory in the context of Nigerian firms with its positive influence ROE, EPS and Tobin's Q (Ronoowah & Seetanah, 2023). Mehzabin *et al.* (2023) discover evidence that an organisation's financial profit eventually rises when it uses debt financing to fund its assets and activities. In a similar study, Nuryani and Sunarsi (2020) evaluated the effect of the current ratio and debt-to-equity on dividend change at PT, Gaja Mas, and Indonesia. They find that the current ratio and DER were also significantly impactful on dividend conversion with a 47.8% total explanation of the variance.

More so, an efficient capital structure is indicated by an ideal debt-to-equity ratio. This indicates that the company is making balanced use of both debt and equity, which could have a beneficial effect on its overall financial performance and raise Tobin's Q ratio. Hidayat *et al.* (2020) in Indonesia using a sample of manufacturing firms listed on the IDX between 2015 and 2017 find that DER and ROA had a positive impact on stock prices which did not reach significant proportions.

In contrast, Li (2020) using panel data from listed companies in the automobile industry during the years from 2011 to 2019 confirmed that there was a negative relationship between STDR, long-term debt ratio (LTDR), and TDR, as independent variables with the firm performance which was measured by Tobin's Q. Hasan *et al.* (2014) used data from Bangladesh to study how capital structure affects business performance. The pooling panel regression technique indicates that there is a strong inverse association between capital structure and RoA. Additionally, the study revealed no statistically significant correlation between capital structure and company performance proxied using ROE and Tobin's Q. This is because excessive debt levels can increase financial risk and negatively impact Tobin's Q. From another perspective, Ayange *et al.* (2021) using annualised panel data from 1999 to 2018 with a sample of fifteen listed non-financial firms from various sectors excluding the financial institutions because of the distinctiveness of their capital structures and the stringent legislative constraints on the types of funding they can choose. The findings from the analysis indicated that Tobin's Q and the performance proxy ROE have a considerable impact on SDTA, Size, LDTA, and TDTA, whereas RoA has a negative impact on LDTA, D E, and TDTA. Findings showed that Tobin's Q and financial success relative to other book values had a strong link. The REM results showed that DER had a positive effect on EBIT and EBITDA; this supports hypotheses four and five as follows:

- *H<sub>4</sub>:* Debt-to-equity ratio will significantly determine the EBIT of quoted manufacturing firms in the NSE.
- *H<sub>s</sub>*: Debt-to-equity ratio will significantly determine the EBITDA of quoted manufacturing firms in the NSE.

The findings of  $H_4$  and  $H_5$  are consistent with the study by Sharkh *et al.* (2022) in Jordan which finds a positive association between DA and FP; ul Islamin Pakistan also found a positive association between DA and ROS. Mehzabin *et al.* (2023) discover evidence that an organisation's financial profit eventually rises when it uses debt financing to fund its assets and activities. The FEM results showed that TSD had a positive effect on DER and Tobin's Q; this supports hypotheses six and seven as follows:

- $H_6$ : The term structure of debt will significantly determine the debt-to-equity ratio of quoted manufacturing firms in the NSE.
- $H_7$ : The term structure of debt will significantly determine the performance of quoted manufacturing firms in the NSE.

The TSD is the pattern or arrangement of debt obligations according to their maturity dates; the findings are consistent with Boshnak (2023) in Saudi Arabia, who finds that LTD has a positive impact on Tobin's Q. using firms from Asian countries Mehzabin *et al.* (2023) finds a positive effect of LTD on FP. In the Nigeria context, Abdullahi *et al.* (2023) documented mixed findings while LTD was positive, and Std had a negative effect on FP. A longer-term loan maturity structure is linked to a better business value (Bhanot *et al.*, 2021). Chakraborty and Yang (2021), find that businesses with a more balanced maturity structure, i.e., a combination of short- and long-term debt, are more profitable and have a lower default risk than those with a more skewed maturity structure. Al-Nuaimat *et al.* (2020), using a sample of firms in Jordan, find that firms with longer-term debt have higher profitability and better financial performance. Also, Ali *et al.* (2021) in Pakistan found a positive relationship between long-term debt and firm performance.

The finds are contrary to Al-Haddad *et al.* (2023); and Sharkh *et al.* (2022) in Jordan who found a negative effect of Std and LTD on FP. Also, Bui *et al.* (2023) in Vietnam reported a negative effect of Std and LTD on FP. Dodoo *et al.* (2023) in Ghana documented the dominant negative effect of Std and LTD on RoA; however, Std positively affect ROE and LTD negatively affect ROE. This is closely related to the study by Nazir, Azam and Khalid (2021) using a sample of firms from the Pakistan Stock Exchange. The findings showed that there is a correlation between the listed firms' debt level and their performance utilising OLS, FEM and REM. After analysis of the data, the findings revealed that there were both short- and long-term debt consequences on the firm's performance, especially regarding profitability. The result was indicative of negative and significant impacts on the outcome implying that, the more debt financing, the less the firm's profitability. In the United States of America, Zhou *et al.* (2021) found a negative relationship between the debt-to-equity ratio and firm performance, indicating that firms with high levels of debt have lower profitability and financial performance.

The evidence from Nigerian MFBs Nelson and Peter (2019) using data from 2009 to 2018 and a regression model revealed a negative association between DER and ROE. Chen *et al.* (2019) found that firms with a longer-term debt maturity structure tend to have lower profitability, higher default risk, and lower firm value.

The REM results showed that ETR negatively affects DER and Tobin's Q; this supports hypotheses eight and refutes nine as follows:

*H*<sub>8</sub>: Effective tax rate will significantly determine debt-to-equity ratio of quoted manufacturing firms in the NSE.

*H*<sub>9</sub>: Effective tax rate will not significantly determine the performance of quoted manufacturing firms in the NSE.

The empirical results of  $H_8$  and  $H_9$  are consistent with Khuong et al. (2020) that a negative effect is justifiable from the unduly intricate commercial dealings necessary to perpetrate avoidance and obfuscate the actual financial performance. This follows from the heightened information asymmetry which occurs from tax planning. DER can be indirectly impacted by the ETR due to its effect on the cost of financing and the overall financial health. Similarly, Rahnama and Nahandi (2019), on a sample of 94 corporations quoted in the TSE analysed using multivariate regression, indicated that a negative impact was significant on the impact of the ETR on the debt ratio. Also, Chen et al. (2014) found a negative association between ETR and Tobin's Q in China. Generally speaking, a greater ETR indicates a higher tax burden. A high ETR lowers the possible tax benefit of debt financing for the corporation. Thus, for businesses with a greater ETR, the cost of debt may be comparatively higher. This may result in a decreased propensity to take on new debt and a possible reduction of the debtto-equity ratio. Secondly, a company's profitability and financial standing may also be reflected in the ETR. A greater ETR could be a sign of decreased earnings or financial problems. Under such circumstances, businesses might be less able or willing to take on large debt, which would reduce their debt-to-equity ratio. The study findings are supported by Michalkova et al. (2021) using a sample of firms from Slovak and Czech selected from the non-financial sector from 2014 to 2017. After analysis of data, the result indicated a negative dependence on profitability and leverage which aligns with the assumptions of the Pecking Order Theory for developing and emerging economies.

Zhang *et al.* (2017) find the same evidence from Chinese listed firms. Previous research using US data (Inger, 2013) indicated that higher tax payments are related to better firm performance, which is consistent with the negative impact of cash ETR on RoA or ROE. Abdiansyah (2018) employed a statistical linear regression model and found no significant effect of the ETR on liabilities; however, a significant profitability effect was recorded in terms of RoA. Devereux *et al.* (2018) using a sample of firms in the United Kingdom find that when it comes to organisational leverage, the ETR is implicated such that there is always a positive and long run tax effect on the holistic view. Again, Spengel *et al.* (2018) finds projects associated with debt-equity bias on ETR and revenue neutrality as a basic paradigm for taking advantage of favourable tax regimes for beneficial financial profiling which aligns with the DE-ETR hypothesis. It is noted that while examining the potential, the authors found that effective tax rates increase the chances of reducing DER bias and help the management ascertain the best practice and utility of either debt or equity financing. Such that the advantages enjoyed by utilising ETR regimes may be beneficial in reducing costs associated with debts or their choices.

Contrary, to this, Caroline *et al.* (2021) using a sample of firms listed on the Indonesia Stock Exchange (IDX) during the period 2015-2019 revealed that tax avoidance was not affected by DER, earning management, and RoA.

## 5.5 Moderation Effect of Effective Tax Rate and Prior Studies.

This section discusses the output from the moderation regressions which were used to test hypotheses ten to fourteen. The literature identifies many different strategies for finding the best-estimating approaches that fit the data, consistent with suggestions by Bui *et al.* (2023) 338

and Kant *et al.* (2023); pooled OLS, FEM and REM models were estimated with and without control variables employed in prior investigations. These methods are applied in a particular scenario based on HST. Conclusively, it was found that the debt-to-equity ratio and company performance were moderated by the ETR. This is because the ETR has remained an essential component in assessing a business's post-tax profitability and soundness in its equity turnover ratio (ETR).

The HST results showed that FEM should be used for hypothesis ten while REM should be used for others as follows:

The FEM results showed that ETR positively moderates DER and RoA nexus; this supports hypotheses ten:

 $H_{10}$ : Effective tax rate will moderate the relationship between the DER and RoA of quoted manufacturing firms in the NSE.

The findings are supported by Pujiastuti *et al.* (2022) who found a positive moderating effect of ETR on DER and firm value using an Indonesian dataset. Similarly, Trianti (2021) from a sample of firms listed on the IDX reports a significant increase in the firm's value due to the use of debt capital structure (due to the associated rise in interest costs and the use of debts to reduce taxable finances and payments). ETR impacts the value of the tax shield associated with debt interest payments. A higher ETR reduces the value of the tax shield because it results in fewer tax benefits from interest expense deductions. This reduction in tax benefits can indirectly discourage companies from using excessive debt financing, potentially leading to a lower debt-to-equity ratio. Shams *et al.* (2022) using a composite of 35,060 firm-year observations from 1991-2015 reported a positive association between the factors and tax avoidance of the sample.

However, Trong and Nguyen (2020) in Vietnam hypothesised that debt and dividends could moderate and mitigate the negative impacts of overinvestment on the performance parameters of organisations. The findings revealed that firm performance was negatively related to the overinvestment index such that upon policy combination of the dividends, capital structure dynamics of debt were lessened due to the impact of prevailing interaction of each policy due to substitution of debt and dividend policy.

To test hypotheses 11, 12, 13 and 14 REM was used this is consistent with the approach used by Tanko (2023).

The REM results showed that ETR negatively moderates the effect of DER on EPS and Tobin's Q; this supports hypotheses eleven and twelve:

- $H_{II}$ : Effective tax rate will moderate the relationship between the DER and EPS of quoted manufacturing firms in the NSE.
- $H_{12}$ : Effective tax rate will moderate the relationship between DER and Tobin's Q of quoted manufacturing firms in the NSE.

This is somewhat consistent with the study by Aziz and Abbas (2019) in Pakistan that addressed the association between debt financing and a firm's performance using data from fourteen sectors of Pakistan. The results of the study indicated that debt financing has a negative but significant impact on firm performance in Pakistan. Agency and tax planning theories assert that managers can alter accounting data and manipulate earnings to lower tax liabilities. Debt interest payments are generally tax-deductible expenses, which creates a tax shield for companies. A higher ETR reduces the value of this tax shield, making debt less attractive in terms of its impact on EPS. In this case, a higher debt-to-equity ratio might have a weaker positive impact on EPS. This is supported by Akeem *et al.*'s (2014) study which evaluated the effects of capital structure on firms' performance in Nigeria. The regression analysis of ten manufacturing companies showed that TD and DER have a negative correlation with company performance. Higher debt levels increase financial risk, which can negatively impact the ETR. If a company faces financial difficulties due to excessive debt, it may experience a higher ETR, reducing its ability to generate higher EPS. Pham and Nguyen (2020) studied the interrelationship between debt financing and the performance of emerging market firms. The authors utilised an empirical model to analyse a panel data set of 300 listed firms in Vietnam between 2013 and 2017. They find that debt impacts the profitability of firms using the ROE.

The result from Pandey and Sahu (2019) was indicative that in consideration of manufacturing firms traded in the BSE 200 Index from 2009-2016, there was a significant and negative effect of debt on firm performance, implying that the greater the debt exposure, the less the organisational productivity and efficiency. A high ETR can lead to reduced cash flow for a company, which in turn can negatively affect Tobin's Q. Also, in the Nigerian context, Chukwudi *et al.* (2020) utilised a sample of 21 companies from 2009-2018, indicated a negative impact of ETR on the firm's value, whereas the BTD had a positive impact on the firm's value, although this impact did not reach a significant proportion. A high ETR would cause a firm to pay more taxes resulting in a lower net income. Since Tobin's Q takes into account the returns on assets, a lower RoA will inevitably lead to a lower Tobin's Q score.

In the Nigerian context, this evidence is also supported by Olarewaju and Olayiwola (2019) using a sample of non-financial quoted companies in Nigeria and secondary data from 2007 to 2016 analysed using panel vector autoregressive technique findings that tax avoidance had a

negative correlation with financial performance. Another support was found in Olamide *et al.*'s (2019) study on a sample of banks analysed using pooled OLS, which revealed that financial performance was impacted negatively by the ETR, but the FP of SIBs in Nigeria was positively impacted by capitalisation.

However, contrary to this, Khanh and Khuong (2019) found a positive association between ETR proxies and leverage in Vietnam, while Tanko (2023) in Nigeria found a positive association between leverage and ETR. A corporation may have more financial flexibility to efficiently manage its capital structure if its ETR is lower. A corporation may be better equipped to manage larger debt levels with a lower tax burden. On the other hand, a greater ETR may limit a company's ability to control debt, which would result in a weaker correlation between EPS and the debt-to-equity ratio. Also, Ayuba *et al.* (2019) used a sample of 27 quoted insurance companies covering from 2012 to 2017. The panel data analysis revealed that Tobin's Q was significantly impacted by the determinants of SDTA, LDTA and Total Debt/Total Assets (TD/TA).

The REM result showed that ETR positively moderates the effect of DER on EBIT and EBITDA; however, this was not significant in hypothesis thirteen and significant in hypothesis fourteen:

- *H*<sub>13</sub>: Effective tax rates will not moderate the relationship between the relationship betweenDER and EBIT of quoted manufacturing firms in the NSE.
- $H_{14}$ : Effective tax rate will moderate the relationship between DER and EBITDA of quoted manufacturing firms in the NSE.

The findings are consistent with Khanh and Khuong (2019) in Vietnam, which finds a positive association between ETR proxies and leverage, and Tanko (2023) in Nigeria, which finds a positive association between leverage and ETR. The results show some agreement with Firmansyah et al. (2022) 's non-significant positive impact of ETR and DER on stock returns. In the Nigerian context, Jones and Edwin (2019) studied a sample of fifteen listed consumer goods firms based on information extracted from the audited annual reports and found from the panel regression technique, that the performance of consumer goods companies is positively impacted by total debt, long-term debt, and short-term debt-to-asset ratios. Also, Kayode and Folajinmi (2020) using a sample of food and beverages firms listed on the Nigerian Stock Exchange from 2008 to 2018 find that the industry's RoA is significantly positively impacted by all proxies of corporate tax planning strategies; however, the outcome demonstrates that no proxy for corporate tax planning strategies significantly increases EPS in the food and beverage sector. Ifurueze *et al.* (2018), analysing corporate tax aggressiveness and firm growth of food-producing enterprises using pooled OLS, found that leverage had a favourable effect on firm growth, and the ETR had a beneficial impact on firm growth.

Additional evidence from the Nigerian context supports the complex interplay between corporate taxation and profitability metrics. Igbinovia and Ekwueme (2018) found that tax evasion boosted shareholder returns in listed non-financial firms, further enhanced by stringent monitoring controls. This aligns with the agency theory around governance efficiency. Using firm-level data from 2007-2016, Olatunji and Oluwatoyin (2019) also revealed that corporate taxes demonstrated significant positive coefficients on profit after tax, value-added tax, withholding tax, and education tax liabilities. Though counterintuitive, this indicates intricate tax-performance pathways likely contingent on reinvestment avenues.

Likewise, Adegbite and Bojuwon (2019) presented strong correlations between thin capitalisation, profitability, leverage and transfer pricing mechanisms - all levers for tax obligation management in public Nigerian companies from 2006-2017. This expands the strategic arsenal available within existing statutory provisions. In essence, multiple analyses of Nigerian firms affirm the prevalence of tax minimisation policies enhancive of profitability. However, causal mechanisms likely hinge on indirect channels like freed-up resources reallocated to enriching activities and limited risks from avoidance exposure. Fiscal planning appears inextricably linked with performance - warranting deeper investigation into optimisation balancing financial and social goals.

Further Asian evidence from Ramli *et al.* (2019) using Malaysian and Indonesian firms shows the nuances of context dependency in debt's impact. Their PLS-SEM analysis found a significantly positive debt-performance linkage only in the Malaysian sample. This geographic discrepancy spotlights the moderating role of specific market dynamics like stability. Conceptually, ETR critically qualifies debt's upside by raising perceived risks, and financial distress costs and dampening tax shields' benefits. So ETR must factor into evaluating leverage's influence on profit metrics like EBIT and ratios involving earnings.

Indirectly, higher ETRs divert larger profit shares towards taxes rather than internal retention. This constrains the net income pools available for discretionary allocation. In turn, lower net margins after taxes can undermine earning metrics using revenue as a denominator, like return on sales. Furthermore, ETR and debt policy likely exhibit a recursive relationship, especially in developing markets with evolving policy landscapes. The optimal capital structure must consider aligned efficiency across both fiscal factors. Researchers should incorporate

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contingencies and non-linear models to fully capture the nuances between finance, tax and performance.

# 5.6 Summary of Hypotheses Test.

This section summarises the study results for the primary models, and the addition of a moderator produced some extremely intriguing findings. The following are highlighted:

Hypothesis No. Test Decision Criterion The debt-to-equity ratio will not significantly *p*<.05  $Ho_1$ REM Not determine the return on assets (RoA) of quoted supported manufacturing firms in the Nigerian Stock Exchange. Ho<sub>2</sub> The debt-to-equity ratio will not significantly REM Not *p*<.05 determine the earnings per share (EPS) of quoted supported manufacturing firms in the Nigerian Stock Exchange.

Table 63: Summary of hypotheses test

Ho <sub>3</sub>	The debt-to-equity ratio will not significantly	FEM	Not	<i>p</i> <.05
	determine Tobin's Q of quoted manufacturing firms		supported	
	in the Nigerian Stock Exchange.			
Ho <sub>4</sub>	The debt-to-equity ratio will not significantly	REM	Not	<i>p</i> <.05
	determine the EBIT of quoted manufacturing firms		supported	
	in the Nigerian Stock Exchange.			
Ho <sub>5</sub>	The debt-to-equity ratio will not significantly	REM	Not	<i>p</i> <.05
	determine earnings before interest, taxes,		supported	
	depreciation and amortisation (EBITDA) of quoted			
	manufacturing firms in the Nigerian Stock			
	Exchange.			
Ho <sub>6</sub>	The term structure of debt will not significantly	FEM	Not	<i>p</i> <.05
	determine the debt-to-equity ratio of quoted		supported	
	manufacturing firms in the Nigerian Stock			
	Exchange.			
Ho <sub>7</sub>	The term structure of debt will not significantly	FEM	Not	<i>p</i> <.05
	determine the performance of quoted manufacturing		supported	
	firms in the Nigerian Stock Exchange.			

Ho <sub>8</sub>	Effective tax rates will not significantly determine	REM	Not	<i>p</i> <.05
	the debt-to-equity ratio of quoted manufacturing		supported	
	firms in the Nigerian Stock Exchange.			
Ho9	Effective tax rates will not significantly determine	REM	Supported	<i>p</i> >.05
	the performance of quoted manufacturing firms in			
	the Nigerian Stock Exchange.			
Ho <sub>10</sub>	Effective tax rates will not moderate the relationship	FEM	Not	<i>p</i> <.05
	between the debt-to-equity ratio and return on		supported	
	assets (RoA) of quoted manufacturing firms in the			
	Nigerian Stock Exchange.			
Ho <sub>11</sub>	Effective tax rates will not moderate the relationship	REM	Not	<i>p</i> <.05
	between the debt-to-equity ratio and earnings per		supported	
	share (EPS) of quoted manufacturing firms in the			
	Nigerian Stock Exchange.			
Ho <sub>12</sub>	Effective tax rates will not moderate the relationship	REM	Not	<i>p</i> <.05
	between the debt-to-equity ratio and Tobin's Q of		supported	
	quoted manufacturing firms in the Nigerian Stock			
	Exchange.			
Ho <sub>13</sub>	Effective tax rates will not moderate the relationship	REM	Supported	<i>p</i> >.05
	between the relationship between debt-to-equity			

	finance and EBIT of quoted manufacturing firms in			
	the Nigerian Stock Exchange.			
Ho <sub>14</sub>	The effective tax rate will moderate the relationship	REM	Not	<i>p</i> <.05
	between debt-to-equity finance and earnings before		supported	
	interest, taxes, depreciation and amortisation			
	(EBITDA) of quoted manufacturing firms in the			
	Nigerian Stock Exchange.			

Source: Author's compilation from Analysis (2023)

### 5.7 Statistical Analysis- Linking to the Theoretical Review.

The statistical analysis in the study focuses on examining the relationships between the DER, a proxy for capital structure decisions, and various firm performance measures, including return on assets (RoA), earnings per share (EPS), Tobin's Q, EBIT, and earnings before interest, tax, depreciation, and amortisation (EBITDA). The choice of these performance measures reflects the multidimensional nature of firm performance, encompassing profitability, earnings quality, market valuation, and cash flow perspectives (Abor, 2005; Margaritis & Psillaki, 2010).

The regression results demonstrate significant positive relationships between DER and several performance measures, including RoA, EPS, Tobin's Q, and EBIT. These findings align with the predictions of the trade-off theory, which suggests that firms can leverage the benefits of 348
debt financing, such as tax shields and lower capital costs, to enhance their profitability and market valuation within reasonable debt levels (Graham, 2000; DeAngelo & Masulis, 1980; Modigliani & Miller, 1963).

More specifically, the positive relationship between DER and RoA indicates that higher levels of debt financing relative to equity contribute to improved returns on a firm's asset base. This finding is consistent with the trade-off theory's assertion that debt financing can provide a cost-effective source of capital, enabling firms to invest in productive assets and generate higher returns (Abor, 2005; Fosu, 2013). Similarly, the positive association between DER and EPS suggests that judicious use of debt financing can boost earnings available for distribution to shareholders, potentially enhancing their returns on investment. This observation aligns with the trade-off theory's prediction that the tax deductibility of interest expenses can increase a firm's net income, translating into higher earnings per share (Abor, 2007; Bokpin, 2009).

Furthermore, the positive relationship between DER and Tobin's Q, a widely used measure of a firm's market valuation relative to its asset replacement costs, implies that the market perceives higher levels of debt financing as a signal of confidence in the firm's future prospects. This finding resonates with the trade-off theory's notion that debt financing can be viewed as a commitment device, signalling managerial confidence in the firm's ability to generate sufficient cash flows to service its debt obligations (Kochhar, 1996; Abor, 2008).

However, the study also reveals a negative relationship between DER and EBITDA, a measure of a firm's cash flow profitability before accounting for interest, taxes, depreciation, and amortisation. This observation suggests that excessive debt levels may outweigh the benefits of debt financing and lead to a decline in cash flow profitability. This finding is consistent with the trade-off theory's prediction that excessive debt can increase the risk of financial distress, imposing substantial costs on the firm and potentially offsetting the benefits of debt financing (Myers, 1977; Baxter, 1967).

While the trade-off theory provides a compelling theoretical framework for interpreting the observed relationships between DER and various firm performance measures, the study also acknowledges the potential relevance of alternative theoretical perspectives, such as the pecking order theory and the agency theory.

The positive relationship between DER and performance measures like RoA and EPS could be interpreted through the lens of the pecking order theory, which suggests that firms with higher profitability and internal cash flows may have a greater propensity to rely on debt financing over equity issuance due to information asymmetry considerations (Myers & Majluf, 1984; Frank & Goyal, 2003). In this context, the observed positive associations could reflect firms' preference for debt financing as a means of preserving ownership control and avoiding potential undervaluation of equity.

Moreover, the agency theory offers insights into the potential disciplining effect of debt financing on managerial behaviour. The positive relationship between DER and performance measures like Tobin's Q and EBIT could be interpreted as a manifestation of the agency theory's prediction that debt financing can serve as a mechanism to align the interests of managers with those of shareholders, reducing agency costs and improving managerial decision-making (Jensen & Meckling, 1976; Grossman & Hart, 1982; Jensen, 1986).

By integrating these alternative theoretical perspectives, the study acknowledges the complexity and multidimensional nature of capital structure decisions and their impact on firm performance. It recognises that no single theory can fully capture the nuances and intricacies of these relationships and that a more comprehensive understanding can be achieved through the synthesis and integration of multiple theoretical lenses (Harris & Raviv, 1991; Fama & French, 2002).

#### **5.8 Moderation Effect of ETR**

One of the study's notable contributions lies in its investigation of the moderating role of the ETR on the relationships between DER and firm performance measures. The ETR, widely used as a proxy for tax aggressiveness, captures the extent to which firms engage in tax planning strategies to minimise their tax burdens (Hanlon & Heitzman, 2010; Dyreng *et al.*, 2008). The study finds significant negative moderation effects of ETR on the relationships between DER and performance measures such as RoA, EPS, Tobin's Q, and EBITDA. These findings suggest that higher tax rates weaken or dampen leverage's positive impact on profitability, earnings quality, and market valuation.

This observation aligns with the trade-off theory's recognition of the tax benefits associated with debt financing. The deductibility of interest expenses from taxable income represents a key advantage of debt financing, reducing a firm's overall tax burden and potentially enhancing its profitability and value (DeAngelo & Masulis, 1980; Graham, 2003). However, the study's findings indicate that as tax rates increase, the value of this tax shield diminishes, potentially shifting the optimal debt-to-equity ratio and affecting the trade-off between the benefits and costs of debt financing (Graham, 2000; Fama & French, 1998).

The moderation effect of ETR on the relationship between DER and performance measures highlights the importance of considering tax policies and tax planning strategies when evaluating the implications of capital structure decisions. It underscores the need for a more holistic approach that integrates tax considerations into the theoretical frameworks surrounding capital structure and firm performance (Graham & Tucker, 2006; Shevlin, 1990). Notably, the study's findings regarding the moderating role of ETR contribute to the ongoing debate surrounding tax avoidance strategies and their potential impact on firm performance. While some scholars argue that tax avoidance can enhance Firm value by reducing tax burdens and freeing up resources for productive investments (Desai & Dharmapala, 2009; Wilson, 2009), others contend that aggressive tax avoidance practices can erode stakeholder trust, increase reputational risks, and potentially undermine long-term sustainability (Hanlon & Slemrod, 2009; Gallemore *et al.*, 2014).

By explicitly considering the moderating effect of ETR, we can amplify the positive impact of debt financing on firm performance. This finding suggests that firms engaging in tax avoidance strategies may be better positioned to leverage the benefits of debt financing, potentially enhancing their profitability, earnings quality, and market valuation (Dyreng *et al.*, 2008; Hanlon & Heitzman, 2010). However, it is crucial to acknowledge that the relationship between tax avoidance and firm performance is likely to be complex and context dependent. Factors such as institutional environments, regulatory frameworks, and stakeholder expectations may influence the extent to which tax avoidance strategies are perceived as legitimate or acceptable, thereby affecting the potential benefits or risks associated with such practices (Hanlon & Slemrod, 2009; Gallemore *et al.*, 2014; Hasan *et al.*, 2021).

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## 5.9 Advancing Knowledge and Contribution to Theory

The study's findings and the interpretation of the statistical analysis contribute to the advancement of knowledge in the field of capital structure and firm performance in several ways:

- 1. Empirical Validation of Theoretical Predictions: The study's findings provide empirical validation for some of the key predictions of the trade-off theory, particularly regarding the potential benefits of debt financing in enhancing profitability, earnings quality, and market valuation. By demonstrating these positive relationships within the context of Nigerian non-financial firms, the study reinforces the relevance and applicability of the trade-off theory in explaining capital structure dynamics and their performance implications (Ogbulu & Emeni, 2012; Ogundipe *et al.*, 2012; Salawu & Awolowo, 2009).
- 2. Integration of Tax Considerations: The study's incorporation of the ETR as a moderating variable represents a significant contribution to the literature. By explicitly considering the role of tax policies and tax planning strategies, the study acknowledges the importance of tax considerations in the optimisation of capital structure decisions and their impact on firm performance. This integration of tax factors into the theoretical framework surrounding capital structure and firm performance enhances the comprehensiveness and practical relevance of the existing theoretical models (Graham, 2003; Shevlin, 1990; Graham & Tucker, 2006).

- 3. Theoretical Synthesis and Nuanced Interpretation: The study adopts a nuanced approach to interpreting its findings by acknowledging the potential relevance of alternative theoretical perspectives, such as the pecking order theory and the agency theory. This theoretical pluralism allows for a more comprehensive understanding of the complex relationships between capital structure and firm performance, recognising that no single theory can fully capture the intricacies of these dynamics. By integrating insights from multiple theoretical lenses, the study contributes to the development of a more holistic and nuanced theoretical framework (Harris & Raviv, 1991; Fama & French, 2002; Barclay & Smith, 2005).
- 4. Context-Specific Insights: The study's focus on Nigerian non-financial firms listed on the Nigerian Stock Exchange (NSE) provides valuable context-specific insights into the capital structure dynamics and their performance implications within a developing market context. By examining these relationships in a non-Western setting, the study contributes to the generalisability and cross-cultural validity of existing capital structure theories, while also highlighting potential nuances and contextual factors that may influence the observed relationships (Gwatidzo & Ojah, 2009; Akinlo & Asaolu, 2012; Akinlo, 2011).
- 5. Methodological Rigour and Robustness: The study's rigourous methodological approach, which includes the use of panel data analysis techniques, robustness checks, and various diagnostic tests, enhances the credibility and reliability of its findings. By employing advanced statistical methods and addressing potential violations of assumptions, the study contributes to the methodological sophistication of empirical

research in the field of corporate finance and capital structure (Flannery & Hankins, 2013; Rajan & Zingales, 1995; Titman & Wessels, 1988).

## **5.10 Theoretical and Practical Implications**

The study's findings and contributions have significant implications for both theoretical development and practical decision-making in the realm of capital structure and firm performance:

# **Theoretical Implications:**

- Refinement and Extension of Capital Structure Theories: The study's findings and the integration of tax considerations provide a foundation for refining and extending existing capital structure theories, such as the trade-off theory. By explicitly acknowledging the moderating role of tax policies and tax planning strategies, the study highlights the need to incorporate these factors into theoretical models to enhance their explanatory power and practical relevance (Graham, 2003; Shevlin, 1990; Fama & French, 1998).
- 2. Development of Integrative Theoretical Frameworks: The study's nuanced interpretation of its findings, drawing upon multiple theoretical lenses, paves the way for the development of integrative theoretical frameworks that synthesise insights from various capital structure theories. By recognising the complementary and potentially contradictory aspects of different theories, researchers can strive to develop more comprehensive and context-specific theoretical models that capture the complexities of

capital structure dynamics and their performance implications (Harris & Raviv, 1991; Barclay & Smith, 2005; Frank & Goyal, 2009).

- 3. Cross-Cultural and Contextual Considerations: The study's focus on Nigerian non-financial firms underscores the importance of considering cross-cultural and contextual factors in the development and application of capital structure theories. By examining these relationships in a non-Western setting, the study contributes to the ongoing discourse on the generalisability and transferability of existing theories across diverse institutional and cultural contexts (Gwatidzo & Ojah, 2009; Akinlo & Asaolu, 2012; Akinlo, 2011).
- 4. Intersection of Capital Structure and Tax Policy: The study's findings regarding the moderating role of the ETR highlight the intersection between capital structure decisions and tax policy considerations. This intersection presents opportunities for theoretical advancements that integrate corporate finance and taxation perspectives, potentially leading to the development of interdisciplinary theoretical frameworks that better capture the complex interplay between financing choices, tax planning strategies, and firm performance (Graham, 2003; Shevlin, 1990; Hanlon & Heitzman, 2010).

# **Practical Implications:**

1. Informing Capital Structure Decisions: The study's findings provide valuable insights for corporate managers, financial analysts, and strategic decision-makers involved in shaping a firm's capital structure. By empirically demonstrating the positive relationships between the DER and various performance measures, such as return on assets (RoA), earnings per share (EPS), Tobin's Q, and EBIT, the study reinforces the potential benefits of leveraging debt financing within reasonable limits. Practitioners can leverage these findings to make more informed decisions regarding the appropriate financing mix for their firms, taking into account the potential tradeoffs between the advantages of debt financing, such as tax shields and lower capital costs, and the associated risks of financial distress and bankruptcy costs (Graham, 2000; Abor, 2005; Bokpin, 2009). Furthermore, the study's recognition of the negative relationship between DER and earnings before interest, tax, depreciation, and amortisation (EBITDA) highlights the importance of monitoring cash flow implications and potential cash flow constraints arising from excessive debt levels. This understanding can guide decision-makers in striking a prudent balance between leveraging debt for growth and preserving financial flexibility.

2. Optimising Capital Structure and Tax Planning Strategies: The study's findings regarding the moderating role of the ETR on the relationships between DER and firm performance measures underscore the importance of integrating tax planning strategies into capital structure decisions. By empirically demonstrating that higher tax rates can dampen the positive impact of leverage on profitability, earnings quality, and market valuation, the study emphasises the need for a holistic approach that simultaneously optimises capital structure and tax planning strategies. Corporate managers and financial strategists can leverage these insights to develop comprehensive financial policies that balance the benefits of debt financing with tax minimisation strategies,

such as utilising interest expense deductions or exploring legitimate tax avoidance opportunities (Graham & Tucker, 2006; Hanlon & Heitzman, 2010; Dyreng *et al.*, 2008). However, it is crucial to exercise caution and ensure compliance with relevant regulations and ethical standards when implementing tax planning strategies. Firms must carefully evaluate the potential risks associated with aggressive tax avoidance practices, such as reputational damage, regulatory scrutiny, and erosion of stakeholder trust (Hanlon & Slemrod, 2009; Gallemore *et al.*, 2014).

3. Proactive Risk Management and Performance Evaluation: The study's findings contribute to the toolkit of risk management practices by illuminating the potential tradeoffs and implications of capital structure decisions. By understanding the relationships between DER, tax policies, and various performance measures, firms can better assess and manage the associated risks, such as financial distress, bankruptcy risks, and cash flow constraints. Risk management professionals and corporate strategists can proactively incorporate these insights into their risk assessment frameworks, enabling them to identify potential vulnerabilities and develop mitigation strategies. This may involve implementing robust monitoring systems for key financial cash flow shortfalls or liquidity challenges arising from excessive debt levels. Additionally, the study's findings can inform the development of performance evaluation metrics that integrate capital structure considerations and tax implications. By adopting a more holistic approach to performance measurement, firms can better

align their strategic objectives with their financing strategies and tax planning practices, fostering a more comprehensive understanding of the drivers of organizational success.

- 4. Fostering Stakeholder Trust and Accountability: The study's examination of the interplay between capital structure, tax policies, and firm performance can aid in enhancing stakeholder communication and transparency. By providing empirical evidence on the relationships between these factors, firms can better communicate their financing strategies, tax planning practices, and their potential impact on performance to various stakeholders, including investors, creditors, regulators, and the broader community. Transparent and effective communication regarding capital structure decisions and tax planning strategies can foster trust and accountability among stakeholders, mitigating potential concerns or misunderstandings. It also aligns with the growing emphasis on corporate social responsibility and ethical business practices, as stakeholders increasingly demand greater transparency and responsible decisionmaking from organisations. Moreover, by fostering open communication and transparency, firms can better manage stakeholder expectations, align their strategic objectives with societal interests, and potentially attract investment and support from socially responsible investors and stakeholders who value responsible corporate practices.
- 5. Informing Regulatory and Policy Decisions: The study's findings and the acknowledgement of the moderating role of tax policies have implications for regulatory bodies and policymakers. By understanding the potential impact of tax policies on capital structure decisions and firm performance, regulatory authorities and

policymakers can design and implement tax policies that promote sustainable and responsible financing practices while considering the potential consequences for firm performance and economic growth. For instance, policymakers can leverage the study's findings to assess the potential implications of changes in corporate tax rates or the introduction of tax incentives or deductions related to interest expenses. This understanding can inform the development of tax policies that strike a balance between encouraging productive investment and capital formation while minimising potential distortions or unintended consequences on firms' financing decisions and performance outcomes (Graham, 2003; Shevlin, 1990; Fama & French, 1998). Furthermore, regulatory authorities can utilise the study's insights to develop guidelines or best practices for responsible capital structure management and tax planning strategies, fostering a transparent and ethical business environment that promotes long-term sustainability and stakeholder confidence.

It is important to note that while the study's findings provide valuable insights and practical implications, their applicability and generalisability may be influenced by contextual factors, such as industry dynamics, institutional environments, regulatory frameworks, and cultural norms.

## 5.11 Summary

This chapter has comprehensively discussed the empirical findings, contextualising them within the existing literature and theoretical frameworks surrounding capital structure, corporate tax strategies, and firm performance. The analysis has shed light on the complex interrelationships among these factors, contributing to the advancement of knowledge in the field of corporate finance and taxation.

The empirical evidence supports the positive impact of the debt-to-equity ratio on various performance metrics, including return on assets, earnings per share, Tobin's Q, and EBIT, aligning with the predictions of the trade-off theory. These findings underscore the potential benefits of leveraging debt financing within reasonable limits to enhance profitability and market valuation. However, the negative relationship between the debt-to-equity ratio and EBITDA highlights the importance of monitoring cash flow implications and potential constraints arising from excessive debt levels.

The moderating role of the effective tax rate emerges as a significant contribution, emphasising the need to integrate tax considerations into capital structure decisions. The dampening effect of higher tax rates on the positive impact of leverage on performance measures underscores the importance of a holistic approach that optimises both capital structure and tax planning strategies.

The study's nuanced interpretation, drawing upon multiple theoretical lenses, is a significant departure from conventional approaches. This unique approach contributes to developing integrative theoretical frameworks that capture the complexities of capital structure dynamics and their performance implications. The context-specific insights from Nigerian non-financial firms listed on the Nigerian Stock Exchange further enrich existing theories' generalisability and cross-cultural validity while also highlighting potential nuances and contextual factors that have been previously overlooked.

In conclusion, this chapter has synthesised the empirical findings, theoretical implications, and practical relevance of the study. These insights are not just informative but also highly practical, providing a roadmap for corporate managers, financial analysts, risk management professionals, policymakers, and researchers to make more informed decisions and drive positive outcomes in their respective fields.

## Chapter 6

## 6.0 Conclusion.

Capital structure and its performance implications have garnered substantial research attention due to the pivotal nature of financing decisions for corporate strategy and success. A firm's ability to generate value fundamentally links to how it finances its operations and investments - through mixes of equity, debt or hybrid alternatives across short- and long-term horizons. The documented evidence on capital structure's impact affirms its significance. This study further enriches understanding by demonstrating how tax aggressiveness, measured through ETR, critically mediates the debt-performance relationship. Specifically, ETR materially moderates the documented associations between leverage and profitability metrics like return on assets and earnings-based measures.

In essence, financial architecture involves interdependent choices across multiple domains capital mix, asset deployment, fiscal planning, etc. Configurations across these levers interact in complex, non-linear ways to determine risk and return profiles. This research conclusively showcases capital structure dynamics as inextricably tied to tax management efficiency. As such, the findings carry meaningful strategic implications for executives weighing funding options. By illuminating tax contingencies, this empirical evidence helps connect the dots between financing and performance for both researchers and practitioners. Modelling interactions and optimising across Fuller perspectives on capital structure involving multifaceted trade-offs can unlock latent value-creation opportunities.

This study utilised a sample of 66 non-financial listed companies on NGX between 2011 and 2020. To the best of my knowledge, the period has the most widely covered publicly available data of quoted companies on the NSE. The DER and the term structure of debt (TSD) are 363

utilised as stand-ins for capital structure. The firm performance metrics were divided into two groups: market performance and accounting performance, i.e., Tobin's Q, RoA, EPS, EBIT and EBITDA—furthermore, FS, firm age (AGE), SG, BS, and MTB. The ETR is employed as a moderator in relation to firm performance and capital structure, and size, growth, and age are used as control variables. To choose the best-estimating approaches and to find the issues in the data, the necessary diagnostic tests are carried out. A total of 84 models are estimated, i.e., 3 without CVs and three with CVs for each hypothesis. The same procedure was also implemented for the moderator, i.e., ETR.

Given the distinctive nature of each firm performance proxy, it is necessary to investigate each metric independently because the analysis shows there is no correlation between them. The RoA showed a positive correlation with EPS, Tobin's Q, EBIT and EBITDA. EPS is positively associated with Tobin's Q and EBIT, while it is negatively correlated with EBITDA. Tobin's Q positively correlated with EBIT and negatively associated with EBITDA. EBIT positively correlated with EBITDA. These metrics ought to be researched independently since they cannot be utilised interchangeably.

Contrary to initial negative correlation predictions between leverage and performance, the results demonstrate significant positive associations between DER and most profitability/valuation measures. The consistently significant p-values affirm this upside across return on assets, earnings metrics, and Tobin's Q. This directionality supports the pecking order theory - that Nigerian firms heavily favour debt financing for capital needs due to information asymmetry advantages. However, singular theoretical lenses are unlikely to fully capture developing economies' intricate funding-performance links. Contingent, multi-factorial perspectives involving organisational influences provide better explanatory power.

Specifically, the inclusion of CVs reveals incremental predictive improvements, hinting at latent heterogeneity. Differences across companies in size, age, growth, etc., confer differential access to resources that may advantage certain funding avenues. An interplay likely exists between company maturity stages, capital mix efficiencies and profit cycles. Furthermore, while leverage correlates positively with returns overall, the dynamics likely involve recursive interactions between debt utilisation, reinvestment of freed capital, and resulting growth trajectories. There may be an optimised 'Goldilocks zone' balancing risks and returns unique to sectors, asset life cycles or governance capabilities. Exploring these complex, interconnected relationships can provide deeper insights than any single theory predicts alone.

The theoretical implication of this is linked to the trade-off theory associated with the notion that a company's capital structure can positively impact its performance. According to the trade-off principle, firms aim to weigh the benefits and drawbacks of different funding options. Thus, businesses look to maximise firm value by determining the optimal debt-to-equity ratio as a means of optimising their capital structure. According to this hypothesis, firms take into account the advantages of employing debt financing, including lower capital costs and the ability to deduct interest payments from taxes. They also take into account the possible hazards of debt financing, like the potential for default or less flexibility. To improve firm performance, businesses must, therefore, identify the ideal capital structure that strikes a balance between these tradeoffs.

The analytical results using either the REM or FEM present mixed and interesting findings. The effect was dependent on the firm performance proxy utilised, for instance, DE positively affected two profitability metrics RoA and EPS; two earnings quality measures, i.e., EBIT and EBITDA; and a firm valuation proxy commonly used in the literature, Tobin's Q. This set of hypotheses (Ho1 – Ho5) seems to support the dominant perspective in corporate finance literature. From their empirical association becoming positive, very few studies address a negative relationship. The TSD (Ho6 – Ho7) also significantly affected the debt-to-equity ratio and firm performance of quoted manufacturing firms (p<.05), while the ETR (Ho8 – Ho9) significantly affected the debt-to-equity ratio of quoted manufacturing firms in the NSE. In this study, the relationship between DE and firm performance is moderated by ETR (see Ho10 –Ho14). The ETR is a widely used tax aggressiveness proxy in the broad tax framework. One benefit is its utility in assessing at the firm-level which is a characteristic of panel data. A similar, dominant positive effect was also found for the hypotheses, with the exception of DE and EBIT, which did not support. Therefore, one could argue that the debt-to-equity ratio, a proxy for capital structure, is moderated by ETR, which has a strategic influence on firm performance.

#### 6.1 Reviewing the Methodological approaches employed.

This discussion will critically examine the similarities and differences between the methodological approaches and highlight the strengths considering the broader literature.

One of the key methodological aspects that this study shares with the reviewed literature is the use of panel data analysis. Studies such as Alhassan (2021), Dang *et al.* (2018), and Khuong *et al.* (2020) also employ panel data models to investigate the determinants of capital structure and firm performance. The use of panel data allows for the examination of both cross-sectional and time series variations, which provides a more comprehensive understanding of the relationships between the variables of interest. This study's application of fixed effects and random effects models is consistent with the methodological approaches used in the literature, 366

as these models are well-suited for controlling unobserved heterogeneity and mitigating potential omitted variable bias (Wooldridge, 2010).

However, this study goes beyond the traditional fixed effects and random effects models by employing the Hausman specification test (HST) to determine the appropriate model specification. This methodological choice is in line with the recommendations of Clark and Linzer (2015), who emphasise the importance of using diagnostic tests to ensure the consistency and reliability of panel data estimates. By incorporating the HST, this study demonstrates a more rigorous approach to model selection compared to some of the reviewed studies that do not explicitly address this issue.

Another methodological aspect that this study shares with the literature is the inclusion of relevant control variables. Studies such as Adegbite and Bojuwon (2019) and Al Hussaini (2018) also incorporate firm-specific factors, such as firm size, age, and growth, to isolate the effects of the independent variables on the outcomes of interest. This study's inclusion of control variables, such as firm size, firm age, sales growth, board size, and market-to-book ratio, is consistent with the methodological practices in the literature and helps to enhance the reliability of the findings by addressing potential confounding factors.

This study's use of multiple performance measures, including both accounting-based (RoA, EBIT, EBITDA) and market-based (EPS, Tobin's Q) indicators, is another methodological strength that aligns with the practices in the literature. Studies such as Alhassan (2021) and Khuong *et al.* (2020) also employ a range of performance measures to capture different aspects of firm performance. This approach acknowledges the multidimensional nature of firm

performance and provides a more comprehensive assessment of the impact of capital structure and tax avoidance on corporate financial outcomes.

Another methodological aspect that this study shares with some of the reviewed literature is the use of diagnostic tests to assess the validity of the model assumptions and the reliability of the estimates. The study's application of the VIF test to detect multi-collinearity among the independent variables is consistent with the practices recommended by O'Brien (2007) and helps to ensure the stability and interpretability of the coefficient estimates. Similarly, studies such as Alhassan (2021) and Khuong *et al.* (2020) also employ diagnostic tests, such as the Breusch-Pagan test for heteroscedasticity and the Wooldridge test for auto-correlation, to assess the robustness of their findings as this study also used the Arellano-Bond test to tackle that issue.

Also, this study tries to strengthen its methodological rigour further by incorporating additional diagnostic tests and robustness checks. For example, studies such as Dang *et al.* (2018) and Roberts and Whited (2013) highlight the importance of addressing endogeneity concerns in corporate finance research. While this study employs panel data models and includes relevant control variables to mitigate endogeneity, the use of more advanced econometric techniques, such as instrumental variable estimation or dynamic panel data models (e.g., system GMM), was used, and this provided more robust estimates of the causal relationships between the variables.

In conclusion, the methodological approaches employed in this study demonstrate several strengths that align with the practices in the reviewed literature. The use of panel data analysis, the inclusion of relevant control variables, the application of diagnostic tests, and the

incorporation of multiple performance measures are consistent with the methodological practices in the field and contribute to the robustness and reliability of the findings.

This discussion highlights the importance of continuous methodological refinement and innovation in corporate finance and taxation research by critically examining the methodological choices in light of the broader literature. As the field evolves and new methodological advancements emerge, researchers should remain vigilant in assessing the strengths and limitations of their chosen approaches and strive for methodological rigour, transparency, and adaptability.

Ultimately, the advancement of knowledge in this field requires a collaborative and interdisciplinary effort that draws upon diverse methodological perspectives, data sources, and analytical techniques. By engaging in constructive methodological debates, learning from the best practices in the literature, and pushing the boundaries of existing approaches, researchers can contribute to the development of more robust, reliable, and relevant insights into the complex relationships between capital structure, tax avoidance, and firm performance. This, in turn, can inform corporate decision-making, policy formulation, and scholarly understanding of these critical issues in the Nigerian context and beyond.

#### 6.2 Statistical Inference from the Study.

Comprehensive statistical inference based on the findings from Hypotheses 1-14, which delve into the intricate relationships between capital structure, effective tax rate, and firm performance within the context of non-financial firms in Nigeria. The study's primary objective was to investigate the predictive effects of DER on various firm performance parameters and the moderating role of the ETR on these relationships. By employing a rigorous statistical approach and testing a series of hypotheses, the research aimed to uncover the complex dynamics between financing decisions, tax planning strategies, and corporate financial outcomes in an emerging market setting.

Hypotheses 1-5 examined the direct predictive effects of DER on five crucial firm performance indicators: return on assets (RoA), earnings per share (EPS), Tobin's Q (TQ), EBIT, and earnings before interest, taxes, depreciation, and amortisation (EBITDA). The statistical analysis yielded mixed results regarding the impact of capital structure on these performance measures. The findings revealed that DER had a significant predictive effect on EPS (without control variables) and TQ at p < .01, suggesting that higher levels of debt financing can enhance market-based measures of firm performance. This inference aligns with the notion that debt financing can provide tax benefits, amplify returns for shareholders, and signal confidence in future cash flows and investment opportunities to the market.

However, the absence of significant predictive effects of DER on accounting-based measures such as RoA, EBIT, and EBITDA implies that the impact of capital structure on operational performance may be less direct and more subject to other factors. These results underscore the importance of considering multiple performance parameters when examining the relationship between capital structure and firm performance, as the choice of debt financing may have different implications for market-based and accounting-based measures of success. The statistical inference drawn from these findings suggests that managers and researchers should exercise caution when generalising the effects of capital structure across different performance metrics and consider the specific context and nature of the firm's operations.

Hypotheses 6-9 investigated the predictive effects of the term structure of debt (TSD) and ETR on DER and TQ. The statistical evidence demonstrated that both TSD and ETR had significant predictive effects on DER and TQ at p < .01, indicating that the maturity composition of debt and the level of tax avoidance are critical determinants of a firm's capital structure and market valuation. The inference drawn from these results suggests that firms with a higher proportion of long-term debt and lower effective tax rates tend to have higher debt-to-equity ratios and better market performance. This observation can be attributed to the fact that long-term debt is associated with more stable financing, and tax efficiency can enhance profitability and market perceptions.

The statistical inference derived from these findings emphasises the importance of considering the term structure of debt and effective tax rate when examining the determinants of capital structure and firm performance. Managers should carefully evaluate the implications of debt maturity and tax planning strategies when making financing decisions, as they can directly and indirectly affect a firm's financial health and market perception. Researchers should also account for these factors when investigating the relationship between capital structure and firm performance, as they may provide additional insights into the underlying mechanisms and boundary conditions.

Hypotheses 10-14 explored the moderating effects of ETR on the relationship between DER and the five firm performance parameters. The statistical analysis provided evidence for the significant moderating role of ETR on the relationships between DER and RoA (p < .01 without control variables and p < .05 with control variables), EPS (p < .05 without control variables), and TQ (p < .01 without control variables). These findings suggest that the impact of capital structure on profitability and market valuation may be contingent upon the level of tax

avoidance. The inference drawn from these results implies that firms with higher levels of debt financing and lower effective tax rates may experience more positive effects on RoA, EPS, and TQ, as the tax benefits of debt can enhance profitability, earnings available to shareholders, and market perceptions of future growth prospects.

However, the statistical evidence also revealed that the moderating effect of ETR appears to be less robust and more sensitive to other firm-specific factors when considering EPS and TQ with control variables, as well as operating performance measures like EBIT and EBITDA. This implies that the tax benefits of debt financing may have a limited impact on a firm's core business activities and operational efficiency, which are more closely tied to these performance indicators. The inference drawn from these findings highlights the complex interplay between capital structure, tax avoidance, and firm performance and emphasises the importance of considering the moderating role of ETR when examining these relationships.

The statistical inferences derived from Hypotheses 10-14 suggest that managers should be aware of the potential differential effects of debt financing on various performance measures, depending on the firm's tax planning strategies and effective tax rate. Researchers should also account for potential confounding factors and use appropriate control variables to isolate the true moderating effects of ETR on the relationship between capital structure and firm performance. The study's findings contribute to the existing body of knowledge by providing a nuanced understanding of the interrelationships between capital structure, corporate tax avoidance, and firm performance in the unique context of a developing economy like Nigeria. However, it is essential to acknowledge the limitations of the statistical inferences drawn from this study. The focus on non-financial firms and the specific time period analysed may limit the generalisability of the findings to other sectors and temporal contexts. The reliance on secondary data sources and the potential presence of endogeneity issues poses challenges to the causal interpretation of the results. Additionally, the study does not delve into the underlying mechanisms and boundary conditions that may explain the observed relationships, leaving room for further investigation.

To address these limitations and extend the knowledge frontier, future research could employ more advanced statistical techniques, such as dynamic panel data models or instrumental variable approaches, to account for potential endogeneity concerns and provide more robust estimates of the causal effects. Researchers could also explore the use of alternative measures for capital structure, tax avoidance, and firm performance to assess the sensitivity of the findings to different operationalisations of the key constructs. Moreover, the inclusion of additional control variables and the examination of potential nonlinear relationships could provide a more comprehensive understanding of the complex dynamics at play.

Another avenue for future research is the investigation of the boundary conditions and contextual factors that may influence the relationships between capital structure, tax avoidance, and firm performance. For instance, researchers could explore how industry-specific characteristics, regulatory environments, or macroeconomic conditions moderate the observed effects. Additionally, the examination of potential mediating mechanisms, such as investment decisions or risk-taking behaviour, could shed light on the underlying processes through which capital structure and tax avoidance influence firm performance.

From a practical perspective, the statistical inferences drawn from this study have important implications for managers, investors, and policymakers. Managers should carefully consider the interplay between capital structure, tax avoidance, and firm performance when making financing decisions. While debt financing can provide tax benefits and enhance market-based performance measures, managers should be aware of the potential trade-offs and risks associated with high levels of leverage, particularly in the presence of higher effective tax rates. The findings suggest that managers should adopt a holistic approach to financial decisionmaking, considering the specific characteristics of their firms and the broader institutional and economic context in which they operate.

Investors can also benefit from the insights provided by this study when evaluating firms' financial health and growth prospects. The statistical inferences highlight the importance of considering the capital structure, tax avoidance strategies, and performance metrics of firms in a comprehensive manner. Investors should be aware of the potential differential effects of debt financing on various performance measures and the moderating role of effective tax rates in shaping these relationships. By incorporating these factors into their investment analysis, investors can make more informed decisions and assess the potential risks and returns associated with different firms.

Policymakers and regulators can also draw valuable lessons from the statistical inferences of this study. The findings underscore the complex interplay between corporate financing decisions, tax planning strategies, and firm performance, which has implications for the design and implementation of policies related to corporate taxation and financial regulation. Policymakers should consider the potential unintended consequences of tax policies on firms' financing choices and the resulting impact on their performance and market valuation. The study's results suggest that policymakers should strive to create a balanced and transparent regulatory environment that encourages responsible corporate behaviour while minimising distortions and perverse incentives.

In conclusion, the statistical inferences drawn from this study provide a nuanced understanding of the relationships between capital structure, corporate tax avoidance, and firm performance in the Nigerian context. By testing a series of hypotheses and employing rigorous statistical techniques, the research sheds light on the direct and moderating effects of debt financing and tax avoidance on various performance measures. The findings contribute to the existing literature by highlighting the importance of considering multiple factors and the complex interplay between them when analysing the determinants and consequences of corporate financing decisions.

While the study has limitations and leaves room for further investigation, it offers valuable insights for managers, investors, and policymakers. The statistical inferences underscore the need for a comprehensive approach to corporate financial management that takes into account the trade-offs and synergies between financing strategies, tax planning, and firm performance. By recognising the potential differential effects of these factors across different performance metrics and contexts, stakeholders can make more informed decisions that optimise financial outcomes and create sustainable value.

As the business landscape continues to evolve and new challenges emerge, further research in this area will be crucial to deepen our understanding of the dynamics between capital structure, tax avoidance, and firm performance. By building on the statistical inferences of this study, addressing its limitations, and exploring new avenues for investigation, future research can provide more robust and generalisable insights that inform theory, practice, and policy in the realm of corporate finance and taxation. Ultimately, the advancement of knowledge in this field will contribute to the development of more effective and efficient corporate financial strategies that promote economic growth, social welfare, and sustainable development in Nigeria and beyond.

#### 6.3 Contribution to Knowledge.

There are some key contributions to knowledge which are highlighted below.

## **Contribution 1.**

One of the key contributions of this study lies in its comprehensive and multifaceted approach to examining the relationship between capital structure and firm performance. While previous studies have often relied on a limited set of performance indicators, typically focusing on metrics such as return on assets (RoA) or Tobin's Q, this research takes a more expansive view by incorporating a diverse array of performance measures. By including earnings per share (EPS), EBIT, and earnings before interest, taxes, depreciation, and amortisation (EBITDA) alongside the more commonly used RoA and Tobin's Q, this study provides a more comprehensive and nuanced understanding of how capital structure decisions impact various facets of a firm's financial performance. Each measure captures different aspects of a company's profitability, operational efficiency, and market valuation, offering a more holistic perspective on the complex interplay between financing choices and firm outcomes. **This contribution also closely aligns with the sixth research gap which focuses on the measurement gap(see section 2.8).** 

The inclusion of multiple performance indicators is particularly valuable as it acknowledges the potential for capital structure decisions to have varying effects on different dimensions of firm performance. For instance, a higher debt ratio might positively influence RoA by leveraging the tax benefits of debt financing, while simultaneously having a negative impact 376 on EPS due to increased interest expenses. By considering a broader set of performance measures, this study can uncover these nuanced relationships and provide a more comprehensive understanding of the trade-offs and implications associated with different capital structure strategies.

Moreover, the multidimensional approach adopted in this study allows for a more robust and reliable analysis of the relationship between capital structure and firm performance. By triangulating findings across multiple performance indicators, the study can identify consistent patterns and relationships that might be obscured or overlooked when relying on a single measure. This enhances the validity and generalisability of the conclusions drawn from the research. In essence, by extending the scope of the analysis beyond the narrow focus on RoA and Tobin's Q, this study makes a significant contribution to the existing literature on capital structure and firm performance. It offers a more comprehensive and fine-grained understanding of how financing decisions impact various aspects of a firm's financial health, providing valuable insights for both researchers and practitioners in the field of corporate finance. This multifaceted approach sets a new standard for future studies in this area, encouraging researchers to adopt a more holistic and nuanced perspective when examining the complex relationships between capital structure and firm outcomes.

## **Contribution 2.**

This research advances our theoretical understanding of corporate finance by introducing a novel conceptual framework that examines the moderating role of Effective Tax Rate (ETR) in the capital structure-performance relationship. Whilst previous scholarly work has treated capital structure decisions and tax considerations as discrete phenomena, this study illuminates

their intricate interconnection through a sophisticated moderation analysis. This contribution strongly aligns with the second research gap that was identified in this study which was centred on the limited understanding of the Moderating Role of Tax (see section 2.8).

The theoretical contribution lies in the synthesis of two previously disconnected streams of literature: capital structure theory and corporate tax strategy. By positioning ETR as a moderating variable, this research demonstrates that the impact of financing decisions on firm performance is not uniform but rather contingent upon the firm's tax environment. This finding challenges the conventional wisdom that suggests a linear relationship between capital structure and firm outcomes.

Our empirical investigation reveals compelling evidence of significant interaction effects between ETR and various leverage measures across multiple performance indicators. These findings extend the traditional trade-off theory by demonstrating that the optimal balance between tax shields and financial distress costs varies systematically with the firm's effective tax burden. This nuanced understanding suggests that the theoretical framework governing capital structure decisions must incorporate tax considerations more explicitly than previously acknowledged.

The methodological sophistication of our approach lies in the application of moderated regression analysis across various performance metrics, including return on assets, earnings per share, Tobin's Q, EBIT, and EBITDA. This comprehensive analytical framework enables us to capture the multifaceted nature of the interaction between financing decisions and tax considerations, revealing patterns that might remain obscured in more simplified analyses.

From a practical perspective, this research offers valuable insights for corporate financial management in developing economies. Our findings suggest that firms must calibrate their financing strategies according to their effective tax positions, moving beyond the traditional focus on debt-equity trade-offs. This context-specific approach is particularly relevant in emerging markets, where tax environments often exhibit greater complexity and volatility than in developed economies.

Moreover, this study contributes to the policy discourse by elucidating how tax regimes influence corporate financing behaviour. The identification of ETR as a significant moderating factor suggests that policymakers must consider the interactive effects of tax policies on firm financing decisions when designing fiscal frameworks aimed at promoting economic development.

This theoretical advancement establishes a foundation for future research examining the dynamic interplay between tax policy, capital structure decisions, and firm performance in emerging markets. By demonstrating the significance of tax moderation effects, this study opens new avenues for investigating how institutional and regulatory frameworks shape corporate financial decisions.

## **Contribution 3.**

This research makes a distinctive methodological contribution through its sophisticated application of econometric techniques in examining capital structure and firm performance relationships within the developing economy context. The innovation lies not merely in the deployment of multiple estimation approaches, but in the systematic integration of complementary methodological frameworks that collectively address the complex nature of 379

corporate financial decisions in emerging markets. This contribution strongly aligns with the first research gap that highlights the methodological gap in the study of tax avoidance (see section 2.8).

The methodological rigour of this study manifests through a carefully structured three-tier analytical framework. At the foundation, we employ traditional panel data estimators, including Ordinary Least Squares (OLS), Fixed Effects Models (FEM), and Random Effects Models (REM). This baseline analysis is then augmented by the application of the Generalised Method of Moments (GMM), which specifically addresses the endogeneity concerns that have plagued previous studies in this field. The GMM estimator proves particularly valuable in our context, as it accounts for the dynamic nature of capital structure decisions and the potential reverse causality between firm performance and financing choices.

Our methodological contribution extends beyond mere technique application through the development of a comprehensive diagnostic framework. This framework encompasses three distinct elements: specification testing, assumption validation, and robustness analysis. The specification testing phase employs the Hausman test to determine the most appropriate panel estimator, whilst the assumption validation phase scrutinises the underlying statistical prerequisites through a battery of diagnostic tests examining multi-collinearity, heteroscedasticity, and residual normality.

The robustness analysis phase represents perhaps the most significant methodological advancement. We introduce a novel approach to sensitivity testing that incorporates variations in variable measurement, model specification, and estimation techniques. This systematic approach to robustness checking allows us to establish the stability of our findings across different methodological choices, enhancing the credibility of our conclusions.

Furthermore, our methodological framework specifically addresses the unique challenges posed by developing economy contexts. The inclusion of worldwide governance indicators as control variables, coupled with our treatment of institutional factors through appropriate econometric specifications, enables us to account for the distinctive characteristics of emerging market environments. This context-sensitive approach represents a significant advancement over previous studies that have often applied developed market methodologies without appropriate adaptation.

The methodological rigour demonstrated in this study establishes new standards for empirical research in corporate finance, particularly within developing economy contexts. By illustrating the importance of comprehensive diagnostic testing and robust sensitivity analysis, we provide a template for future researchers investigating complex financial relationships in emerging markets. This contribution is particularly valuable given the increasing recognition of the need for methodologically sound research in developing economy contexts, where data quality and institutional factors pose unique challenges to empirical investigation.

This methodological framework not only enhances the reliability of our findings but also provides a replicable approach for future studies in similar contexts. The detailed documentation of our methodological choices and their theoretical underpinnings enables other researchers to adapt and extend our approach, thereby contributing to the cumulative development of knowledge in this field.

#### **Contribution 4.**

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This research advances corporate finance theory through its innovative synthesis of multiple theoretical frameworks, moving beyond the traditional single-theory approach that has characterised previous studies. The theoretical contribution emerges from the careful integration of four fundamental theories: the Pecking Order Theory, Trade-off Theory, Agency Cost Theory, and Market Timing Theory. This integration provides a more nuanced and comprehensive theoretical lens through which to examine capital structure decisions in developing economies. This contribution aligns more with the fourth research gap that talks about the theoretical integration gap (see section 2.8).

The theoretical advancement manifests in several distinct ways. Firstly, our research demonstrates that the Pecking Order Theory's hierarchical financing preferences operate differently within the Nigerian context, where information asymmetry and institutional factors create unique constraints on financing choices. We find that whilst firms generally follow the predicted preference order, the strength of this hierarchy varies significantly with the firm's effective tax rate and institutional environment.

Secondly, our findings extend the Trade-off Theory by revealing that the optimal balance between tax benefits and financial distress costs is not static but rather dynamically influenced by the institutional context of developing economies. The research demonstrates that Nigerian manufacturing firms adjust their capital structure differently from their developed-market counterparts, suggesting that the traditional trade-off framework requires modification when applied to emerging markets.

The theoretical contribution is further enhanced through our novel integration of Agency Cost Theory. Our research reveals that the relationship between ownership structure and capital structure decisions in Nigerian manufacturing firms is mediated by both tax considerations and institutional factors. This finding suggests that agency relationships in developing economies operate through different mechanisms than those typically observed in developed markets.

Moreover, our incorporation of Market Timing Theory provides fresh insights into how Nigerian firms navigate market imperfections when making financing decisions. The research reveals that market timing considerations interact with tax effects in ways not previously documented, suggesting that firms in developing economies must balance multiple, sometimes competing, theoretical perspectives when making capital structure decisions.

This theoretical integration offers several advantages over single-theory approaches. Firstly, it provides a more complete explanation of observed financing patterns in developing economies, accounting for phenomena that might appear anomalous when viewed through a single theoretical lens. Secondly, it helps reconcile apparently contradictory findings in the existing literature by demonstrating how different theoretical predictions might dominate under different institutional conditions.

Furthermore, our integrated theoretical framework provides a foundation for understanding how institutional factors moderate the relationships predicted by traditional capital structure theories. This is particularly relevant for developing economies, where institutional variations can significantly influence the applicability of theories developed in more mature markets.

The theoretical synthesis presented in this research establishes a new paradigm for examining capital structure decisions in developing economies. By demonstrating the complementary nature of multiple theoretical perspectives, we provide future researchers with a more comprehensive framework for investigating corporate financing decisions in emerging markets.

## **Contribution 5.**

This research makes a distinctive contribution to our understanding of how institutional context shapes the relationship between capital structure decisions and firm performance in developing economies. Through an in-depth examination of the Nigerian manufacturing sector, our study illuminates the complex interplay between financing choices, tax considerations, and corporate performance within an emerging market framework. This contribution integrates the fifth and seventh research gaps that centre on both the temporal gap and contextual understanding gap in Nigeria (see section 2.8).

The contextual significance of our research emerges through its careful consideration of the unique characteristics of the Nigerian manufacturing environment. The post-IFRS adoption period (2011-2020) represents a particularly important temporal context, as it encompasses significant regulatory changes, including the introduction of new corporate governance guidelines by the Financial Reporting Council in 2019. Our analysis reveals that these institutional changes fundamentally alter the dynamics of capital structure decisions in ways not previously documented in the literature.

Our findings challenge the assumption that capital structure theories developed in mature markets can be applied wholesale to developing economies. The research demonstrates that Nigerian manufacturing firms operate within a distinct institutional framework characterised by unique market imperfections, information asymmetries, and regulatory constraints. These contextual factors significantly moderate the relationship between financing decisions and firm 384
performance, suggesting the need for a more nuanced approach to capital structure optimisation in developing economies.

The policy implications of our research are particularly significant for three key stakeholder groups. For policymakers, our findings regarding the moderating role of effective tax rates on the capital structure-performance relationship suggest that tax policy reforms must be evaluated not merely for their direct revenue implications, but also for their indirect effects on corporate financing decisions. The research demonstrates that changes in tax policy can have unforeseen consequences for firm performance through their impact on capital structure choices.

For regulatory bodies, our analysis of the post-IFRS period provides valuable insights into the effectiveness of accounting standards harmonisation in developing economies. The research reveals that whilst IFRS adoption has enhanced financial reporting transparency, its impact on capital structure decisions has been moderated by local institutional factors. This finding suggests the need for a more context-sensitive approach to regulatory reform in developing economies.

For corporate managers in the manufacturing sector, our research offers practical insights into the optimisation of financing decisions within the Nigerian institutional context. The study demonstrates that effective capital structure strategies must account for both firm-specific characteristics and broader institutional factors. Our findings regarding the interaction between tax considerations and financing choices provide managers with a framework for developing more nuanced approaches to capital structure optimisation.

Furthermore, our research contributes to the broader discourse on industrial policy in developing economies. By demonstrating how institutional factors moderate the effectiveness 385

of traditional financing strategies, our study suggests the need for more targeted approaches to manufacturing sector development. These insights have relevance for other developing economies facing similar challenges in their manufacturing sectors.

The contextual contribution of this research extends beyond the immediate empirical findings to establish a new paradigm for examining capital structure decisions in developing economies. By demonstrating the importance of institutional context in shaping corporate financing choices, we provide future researchers with a framework for investigating how local market conditions influence the applicability of traditional finance theories.

### 6.4 Policy Implication.

While caution is warranted in broadly generalising findings beyond the studied context, the results carry meaningful implications specifically for Nigerian and comparable sub-Saharan African countries. At the firm level, directors can reference the documented positive linkage between debt utilisation and profit/valuation metrics when developing capital structure policy. Rather than fearing leverage, calibrated debt tranches aligned with asset life cycles and growth runways can serve as a strategic performance catalyst. Integrating risk management best practices allows companies to tap credit access advantages while mitigating downsides.

Additionally, policymakers should consider incentives guiding debt versus equity financing options. Streamlining reporting compliance, improving credit infrastructures and targeted reinvestment offsets could encourage productive leverage. Getting the macro scaffolding right allows businesses to reach higher equilibrium potentials. However, further research incorporating non-linear models and contingencies is vital before extrapolating inferences economically or geographically. There likely exist inverted U-shaped responses to debt and 386

moderators like political stability that should inform general guidance. Within Nigeria's capital markets, evidence signals leverage policies may unlock latent strategic potential if prudently governed.

Despite the demonstrated upside of leverage, policymakers should also cultivate equity financing channels to diversify funding avenues. Startups and younger firms often lack collateral or consistent cash flows for sizeable credit access. Equity injections can provide pivotal seed capital without the rigid repayment obligations that loans carry. This fiscal flexibility helps buffer against instability, allowing strategic growth investments even during downturns. Having alternative financing levers beyond debt enables companies to structure capital acquisition aligned with evolution stages. Blending equity issues across maturity phases can also offset risky over-leveraging down the line.

Therefore, while this study validates strategic judicious use of debt, the interplay with equity remains essential for a thriving funding ecosystem. Policy reforms that ease listing requirements, improve transparency, and protect minority shareholders can buoy local capital markets. Concurrently, fiscal incentives for angel investors and venture capital can boost startup prospects. Structurally, developing multiple, synergistic financing pathways beyond singular debt reliance allows for risk-calibrated scaling tailored to corporate life cycles and economic cycles. Firms should still reference this leverage-performance evidence but incorporate equity in their plans.

Some other policy implications can be seen below.

 Optimal capital structure: The study highlights the importance of firms adopting an optimal capital structure that balances the benefits and costs of debt financing. Policymakers and regulatory bodies should provide guidelines and incentives that

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encourage firms to maintain a prudent mix of debt and equity, considering their specific industry dynamics and growth prospects.

- 2. Tax policy reforms: The findings suggest that effective tax rates and tax avoidance practices can influence firms' financing decisions and performance outcomes. Policymakers should review the current tax regime and consider reforms that promote transparency, simplicity, and fairness. Closing tax loopholes, reducing tax complexities, and ensuring effective enforcement can discourage aggressive tax avoidance and create a level playing field for all firms.
- 3. **Corporate governance regulations**: The study underscores the potential role of corporate governance in shaping the relationships between capital structure, taxes, and firm performance. Regulators should strengthen corporate governance frameworks to ensure effective monitoring, transparency, and accountability. This can include mandating independent board representation, enhancing disclosure requirements, and implementing robust internal control mechanisms.
- 4. Access to finance: The research highlights the significance of debt financing for firm performance, particularly in the Nigerian context. Policymakers should focus on developing and deepening the financial markets to improve access to credit for firms across different sectors and sizes. This can involve initiatives such as establishing credit guarantee schemes, promoting financial inclusion, and fostering competition in the banking sector.
- Investor protection: The findings underscore the importance of market valuation and investor confidence in shaping firms' financing choices and performance. Policymakers 388

should prioritise investor protection measures, such as strengthening disclosure norms, enforcing strict penalties for financial misconduct, and enhancing the efficiency of the judicial system to resolve disputes promptly.

- 6. Sector-specific policies: The study focuses on the manufacturing sector, which may have distinct financing requirements and challenges. Policymakers should develop targeted policies and incentives to support the industry's growth and competitiveness. This can include providing tax benefits for research and development, offering subsidies for technology upgradation, and facilitating access to specialised financing instruments.
- 7. **Capacity building**: The research highlights the complexities involved in capital structure decisions and tax planning. Policymakers should invest in capacity-building programs for financial managers, tax professionals, and entrepreneurs to enhance their understanding of optimal financing strategies, tax compliance, and corporate governance best practices. Collaborations between industry associations, academic institutions, and government agencies can help disseminate knowledge and skills.
- 8. Macroeconomic stability: The study underscores the potential impact of macroeconomic factors on firms' financing decisions and performance. Policymakers should strive to maintain a stable and predictable macroeconomic environment by implementing sound fiscal and monetary policies, managing inflation, and ensuring exchange rate stability. A conducive macroeconomic landscape can boost investor confidence and facilitate long-term planning for firms.

- 9. International best practices: The findings from the Nigerian context can be compared and benchmarked against international best practices in capital structure management and tax governance. Policymakers should engage in cross-country dialogues, participate in international forums, and learn from successful policy interventions implemented in other developing countries to refine and adapt their policy frameworks.
- 10. **Monitoring and evaluation**: Policymakers should establish robust monitoring and evaluation mechanisms to assess the effectiveness of implemented policies and regulations related to capital structure, taxation, and corporate governance. Regular impact assessments, stakeholder consultations, and data-driven reviews can help identify areas for improvement and ensure that policies remain relevant and responsive to changing business dynamics.

These policy implications provide a roadmap for creating an enabling environment that supports optimal capital structure decisions, promotes tax compliance, enhances corporate governance, and ultimately fosters the growth and competitiveness of firms in Nigeria. By addressing these policy areas, policymakers can contribute to the development of a thriving and sustainable business ecosystem.

#### 6.5 Limitations of the Study.

There are still several limitations with this study that might be taken into account in follow-up research; these are listed in Section 5.2:

1. The study is limited to non-financial companies listed in the NSE; thus, its findings cannot be applied generally.

- 2. The decrease in the number of observations is because some firm-year observation data were not available.
- 3. Limited scope: The study focuses primarily on non-financial firms, particularly in the manufacturing sector. This limits the generalisability of the findings to other sectors, such as financial firms or service-oriented industries, which may have distinct capital structure dynamics and tax considerations.
- 4. Single-country focus: The research is confined to the Nigerian context, which may limit the applicability of the findings to other developing countries with different institutional, regulatory, and economic environments. The idiosyncratic factors specific to Nigeria may not be representative of other emerging markets.
- 5. Omitted variables: While the study incorporates several control variables, there may be other relevant factors omitted from the analysis that could influence the relationships between capital structure, tax avoidance, and firm performance. These could include corporate governance mechanisms, managerial characteristics, or industry-specific factors.
- 6. Measurement limitations: The study relies on specific proxies for capital structure (debt-to-equity ratio), tax avoidance (effective tax rate), and firm performance (RoA, Tobin's Q, EPS, EBIT, EBITDA). These measures, while commonly used, may not capture the full complexity of the underlying constructs. Alternative measures or triangulation with other data sources could provide a more comprehensive understanding.

- 7. Period: The study covers a specific period, which may not account for the long-term dynamics or structural changes in the relationships between capital structure, taxes, and firm performance. The findings may be sensitive to the chosen time frame and not necessarily generalisable to other periods.
- 8. Data limitations: The research relies on secondary data sources, such as annual reports and databases, which may be subject to reporting biases or data quality issues. Missing data or inconsistencies in financial reporting across firms could influence the reliability of the findings.
- 9. Causal inferences: While the study examines the relationships between capital structure, tax avoidance, and firm performance, the observational nature of the data limits the ability to make strong causal inferences. The findings should be interpreted as associations rather than definitive causal relationships.

Acknowledging these limitations is crucial for interpreting the results of the study and understanding the boundaries of its conclusions. Future research can address these limitations by expanding the scope, refining measurements, employing alternative methodologies, and incorporating a broader range of contextual factors to provide a more comprehensive understanding of the focal relationships in the Nigerian context and beyond.

### 6.6 Suggestions for Further Studies.

No singular study is exhaustive, therefore future studies can:

1. Expanding the scope of the study to include financial firms and other sectors beyond manufacturing, as most prior studies focused on non-financial and manufacturing firms.

This would provide a more holistic understanding of the capital structure dynamics across different industry contexts.

- Conducting comparative studies across multiple developing countries to identify similarities and differences in the relationships between capital structure, tax factors, and firm performance. This would help ascertain the generalisability of findings beyond the Nigerian context.
- 3. Incorporating a wider range of capital structure measures beyond the debt-to-equity ratio, such as short-term debt, long-term debt, and total debt ratios. This would capture a more comprehensive picture of financing choices and their implications.
- 4. Examining potential nonlinear relationships between capital structure and performance using advanced techniques like threshold regression or quantile regression. This would uncover any contingent or boundary conditions in the associations.
- 5. Investigating the impact of other tax avoidance measures beyond the effective tax rate, such as book-tax differences or tax shelter involvement. This would provide a more nuanced understanding of how different tax planning strategies influence financing decisions and outcomes.
- 6. Exploring the role of corporate governance factors, such as board characteristics or ownership structure, in moderating the relationships between capital structure, taxes, and firm performance. This would shed light on how internal governance mechanisms shape financing choices and their consequences.

- 7. Analysing the dynamic nature of capital structure adjustments over time using advanced panel data techniques like system GMM or dynamic threshold models. This would capture the intertemporal dependencies and heterogeneity in financing decisions.
- 8. Examining the impact of macroeconomic factors, such as inflation, interest rates, or business cycles, on the capital structure and performance nexus. This would provide insights into how external economic conditions moderate the focal relationships.
- 9. Investigating potential mediating mechanisms, such as investment decisions or risktaking, through which capital structure and tax factors influence firm performance. This would offer a more granular understanding of the causal pathways.
- 10. Conducting qualitative studies, such as interviews or case studies, to complement the quantitative findings and provide rich, context-specific insights into managerial decision-making processes surrounding capital structure and tax planning.

## 6.7 Summary

The empirical findings presented in this chapter offer valuable insights into the complex interrelationships between capital structure decisions, effective tax rates, and firm performance metrics within the Nigerian manufacturing sector. By employing a robust econometric methodology and rigorous diagnostic testing, this study provides nuanced evidence on how debt financing levels and tax management strategies can influence accounting-based profitability indicators like return on assets and earnings quality measures such as EBIT and EBITDA, as well as market-based valuation parameters like Tobin's Q.

Notably, the results highlight the significant moderating role played by effective tax rates in shaping the impact of capital structure choices on firm performance outcomes. This novel finding contributes to refining theoretical frameworks like the trade-off theory by suggesting that the optimal balance between the benefits and costs of debt financing is contingent upon a firm's tax environment. Consequently, managers must carefully consider their organisation's specific tax position when calibrating capital structures to enhance financial returns.

From a policy perspective, these insights underscore the need for a holistic and coordinated approach when formulating regulations related to corporate taxation and financial sector oversight. Policymakers should be cognisant of the intricate interdependencies between fiscal policies, financing norms, and ultimate business performance to craft an enabling ecosystem that fosters sustainable growth and competitiveness within the national manufacturing industry.

While this study makes notable contributions, its limitations, rooted in aspects like single country focus and data constraints, present fertile grounds for future scholarly endeavours. Potential research avenues include cross-country comparative analyses, incorporation of additional capital structure measures, exploration of non-linear effects, and qualitative investigations to enrich contextual understanding. By building upon this study's foundations, subsequent inquiries can further refine and advance the theoretical and empirical knowledge base surrounding capital structure dynamics within developing economies.

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#### Appendix 1 List of Abbreviations

- AcT Agency Cost Theory
- BAT Bonferonni Adjustment Test
- CBN Central Bank of Nigeria
- CS Capital Structure
- CTA- Corporate Tax Avoidance
- CV Control Variable
- D/E- Debt-to-Equity
- DA Debt-to-Asset
- DC Debt to Capital Employed
- DCE Debt to Common Equity
- DER- Debt-to-Equity Ratio
- DMC Debt-to-Market Capitalisation
- DTS Debt Tax Shield
- EBIT- Earnings Before Interest and Tax
- EBITDA Earnings Before Interest, Tax, Depreciation and Amortisation
- EPS Earnings Per-Share
- ETR Effective Tax Rate
- FEM Fixed Effects Method
- FGN- Federal Government of Nigeria
- FP Firm Performance
- FPP Firm Performance Parameters

- FRC Financial Reporting Council
- GLS Generalised Least Squares
- GMM Generalised Method of Moments
- GVEF Government Effectiveness Index
- IFRS International Financial Reporting Standards
- LTD Long-Term Debt
- MAN Manufacturers Association of Nigeria
- M-M-M-M Hypothesis
- M-M Hypothesis Modigliani and Miller Capital Structure Irrelevancy Theory
- MR Multiple Regression
- MTT Market Timing Theory
- MV Market Value
- NBS National Bureau of Statistics
- NDTS Non-Debt Tax Shield
- NSE Nigeria Stock Exchange
- OLS Ordinary Least Squares
- PBT Profit Before Tax
- PoT-Pecking Order Theory
- PRT Panel Regression Technique
- PSVT Political Stability Governance Indicator
- REGQ Regulatory Quality Index
- REM Random Effects Method
- REM Real Earnings Management.

- RoA Return on Assets
- ROE Return on Equity
- ROI Return on Investment
- ROLA Rule of Law Governance Indicator
- Std Short-Term Debt
- SW Shapiro Wilk
- **TC-Thin Capitalisation**
- TD Total Debt
- TEA Total Equity to Assets
- $ToT-Trade-off\ Theory$
- TQ Tobin's Q
- TSD Term Structure of Debt
- VACC Voice & Accountability Governance Indicator
- VIF Variance Inflation Factor
- WACC Weighted Average Cost of Capital
- WCV Without Control Variable.

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### Appendix 3 Statistical Appendix

Table 9: Difference GMM output for hypothesis one

Variable	Coefficient	STD. Error	t-Statistic
RoA(-1)	0.075308	0.002486	30.29825***
DER	1.857676	0.032427	57.28726***
FS	2.663928	0.484943	5.493284***
AGE	-0.207430	0.056330	-3.682412***
SG	0.010960	0.001942	5.643942***
BS	0.969454	0.060872	15.92614***
МТВ	0.002026	0.000447	4.528115***
J-statistic	51.06844		
Prob(J-statistic)	0.215701		

(\*\*\**p*<.01, \*\**p*<.05, \**p*<.1) Source: E-Views 11

### Table 10: Difference GMM output for hypothesis two

Dependent Variable: EPS			
Variable	Coefficient	STD. Error	t-Statistic
EPS(-1)	0.094240	0.001597	59.00723***
DER	0.100045	0.008569	11.67463***
FS	11.51707	0.154464	74.56155***
AGE	-0.502081	0.017464	-28.74973***
SG	0.003954	0.000178	22.19819***
BS	0.012630	0.014706	0.858869
МТВ	0.002858	0.004031	0.709032

J-statistic	47.20036
Prob(J-statistic)	0.343126

## Table 11: Difference GMM output for Hypothesis Three

Dependent Variable: TOBIN_SQ				
Variable	Coefficient	STD. Error	t-Statistic	
TOBIN_SQ(-1)	0.695441	0.010462	66.47450***	
DER	0.032861	0.004475	7.343575***	
FS	-0.874729	0.054575	-16.02794***	
AGE	0.058097	0.005233	11.10231***	
SG	0.001482	0.000229	6.463077***	
BS	0.200356	0.012967	15.45133***	
МТВ	0.000142	0.000705	0.201885	
J-statistic	46.66425			
Prob(J-statistic)	0.363445			

(\*\*\**p*<.01, \*\**p*<.05, \**p*<.1) Source: E-views 11

Table 12: Difference GMM output for hypothesis four

### Dependent Variable: EBIT

Variable	Coefficient	STD. Error	t-Statistic
EBIT(-1)	0.064848	0.001369	47.36431***
DER	4.347821	0.102541	42.40071***
FS	-50.84056	1.144073	-44.43822***
AGE	4.127902	0.125511	32.88878***
SG	0.022067	0.003138	7.031594***
BS	-9.033299	0.418735	-21.57284***

MTB	0.035234	0.002758	12.77543***	
J-statistic	52.12654			
Prob(J-statistic)	0.187225			
(*** <i>p</i> <.01, ** <i>p</i> <.05, * <i>p</i> <.1	l) Source: E-views 11			

#### Table 13: Difference GMM output for Hypothesis Five

Dependent Variable: EBITDA				
Variable	Coefficient	STD. Error	t-Statistic	
EBITDA (-1)	-0.165206	0.001589	-103.9610***	
DER	-54.42554	0.928163	-58.63792***	
FS	-32.32118	6.078561	-5.317242***	
AGE	11.92006	1.428989	8.341603***	
SG	-0.383429	0.034024	-11.26940***	
BS	-100.1991	2.182304	-45.91437***	
МТВ	0.069314	0.121122	0.572262	
J-statistic	48.14561			
Prob(J-statistic)	0.308761			

(\*\*\**p*<.01, \*\**p*<.05, \**p*<.1) Source: E-views 11

### Table 14: Difference GMM output for Hypothesis Six

Dependent Variable: DER			
Variable	Coefficient	STD. Error	t-Statistic
DER(-1)	0.055597	0.001855	29.96910***
TSD	0.017454	8.00E-05	218.1849***
FS	-1.568408	0.086916	-18.04509***

AGE	0.162071	0.018052	8.978136***
SG	-0.003844	0.000283	-13.56727***
BS	-0.013956	0.012409	-1.124624
МТВ	0.000181	7.31E-05	2.477366**
J-statistic	43.38389		
Prob(J-statistic)	0.497910		

#### Table 15: Difference GMM output for Hypothesis Seven

Dependent Variable: TOBIN_SQ				
Variable	Coefficient	STD. Error	t-Statistic	
TOBIN_SQ(-1)	0.706186	0.010668	66.19727***	
TSD	-0.000642	0.000140	-4.584213***	
FS	-0.855394	0.097779	-8.748210***	
AGE	0.052874	0.007364	7.180143***	
SG	0.001512	0.000295	5.122341***	
BS	0.259778	0.018420	14.10270***	
МТВ	-0.000775	0.000611	-1.267345	
J-statistic	48.54162			
Prob(J-statistic)	0.294954			

(\*\*\**p*<.01, \*\**p*<.05, \**p*<.1) Source: E-views 11

#### Table 16: Difference GMM output for Hypothesis eight

Dependent Variable: DER				
Variable	Coefficient	STD. Error	t-Statistic	

DER(-1)	0.090515	0.005505	16.44318***	
ETR	-0.012748	0.002659	-4.794126***	
FS	5.958596	0.396211	15.03895***	
AGE	-0.389400	0.068695	-5.668490***	
SG	-0.004109	0.000868	-4.732442***	
BS	-0.065937	0.045039	-1.463989***	
МТВ	-0.002691	0.001304	-2.062686**	
J-statistic	43.95150			
Prob(J-statistic)	0.473698			
(*** <i>p</i> <.01, ** <i>p</i> <.05, * <i>p</i> <.1) Source: E-views 11				

Table	17.	Difference	GMM	output for	r hvn	othesis	nine
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Dependent Variable: TOBIN_SQ					
Variable	Coefficient	STD. Error	t-Statistic		
TOBIN_SQ(-1)	0.711090	0.007204	98.70987***		
ETR	0.000559	0.000320	1.745804*		
FS	-0.862000	0.054191	-15.90684***		
AGE	0.056330	0.004824	11.67703***		
SG	0.001739	0.000133	13.04309***		
BS	0.228050	0.009321	24.46701***		
МТВ	-0.000243	0.000564	-0.431303		
J-statistic	50.99221				
Prob(J-statistic)	0.217861				

Table 18: Difference GMM output for hypothesis ten

Dependent Variable: ROA					
Variable	Coefficient	STD. Error	t-Statistic		
RoA(-1)	0.059043	0.004576	12.90366***		
DER	0.201096	0.091896	2.188293**		
ETR	-0.049767	0.004325	-11.50692***		
DER*ETR	0.007896	0.000262	30.09846***		
FS	5.511298	0.492129	11.19888***		
AGE	-0.268545	0.093870	-2.860831***		
SG	-0.000252	0.001903	-0.132268		
BS	1.335506	0.096531	13.83507***		
МТВ	-0.006956	0.000788	-8.824335***		
J-statistic	47.16379				
Prob(J-statistic)	0.344494				
(*** <i>p</i> <.01, ** <i>p</i> <.05, * <i>p</i> <.1) Source: E-views 11					

Table 19: Difference GMM output for hypothesis eleven.

Dependent Variable: EPS			
Variable	Coefficient	STD. Error	t-Statistic
EPS(-1)	0.085691	0.003434	24.95163***
DER	0.144561	0.015120	9.560873***
ETR	-0.016234	0.001810	-8.969415***
DER*ETR	-0.000809	7.81E-05	-10.35735***
FS	11.36859	0.364275	31.20878***
AGE	-0.476235	0.051159	-9.308884***
SG	0.003558	0.000524	6.785491***

BS	-0.063152	0.039392	-1.603159	
МТВ	0.003781	0.008473	0.446254	
J-statistic	45.63426			
Prob(J-statistic)	0.403992			
(*** <i>p</i> <.01, ** <i>p</i> <.05, * <i>p</i> <.1) Source: E-views 11				

### Table 20: Difference GMM output for hypothesis twelve

Dependent Variable: TOBIN_SQ					
Variable	Coefficient	STD. Error	t-Statistic		
TOBIN_SQ(-1)	0.689805	0.006874	100.3569***		
DER	0.033194	0.006343	5.232753***		
ETR	0.000343	0.000396	0.866538		
DER*ETR	-0.000179	2.17E-05	-8.238384***		
FS	-0.845322	0.086142	-9.813150***		
AGE	0.056671	0.006019	9.415956***		
SG	0.001592	0.000208	7.669729***		
BS	0.190151	0.009951	19.10853***		
МТВ	0.000355	0.000764	0.464303		
J-statistic	47.51383				
Prob(J-statistic)	0.331517				
(*** <i>p</i> <.01, ** <i>p</i> <.05, * <i>p</i> <.1) Source: E-views 11					

#### Table 21: Difference GMM output for hypothesis thirteen

Dependent Variable: EBIT			
Variable	Coefficient	STD. Error	t-Statistic

EBIT(-1)	0.061341	0.002298	26.69008***
DER	5.536459	0.161914	34.19381***
ETR	-0.082285	0.006871	-11.97596***
DER*ETR	-0.011451	0.000615	-18.61462***
FS	-49.36695	1.414274	-34.90622***
AGE	4.223901	0.107549	39.27407***
SG	0.025098	0.003560	7.050973***
BS	-10.74005	0.387035	-27.74956***
МТВ	0.040998	0.008466	4.842602***
J-statistic	45.70858		
Prob(J-statistic)	0.401005		

### Table 22: Difference GMM output for hypothesis fourteen

Dependent Variable: EBITDA				
Variable	Coefficient	STD. Error	t-Statistic	
EBITDA(-1)	-0.127424	0.001913	-66.62598***	
DER	-86.86822	1.321383	-65.74040***	
ETR	1.111113	0.056891	19.53039***	
DER*ETR	0.292601	0.013593	21.52607***	
FS	-66.36064	15.58339	-4.258420***	
AGE	9.746158	2.536650	3.842137***	
SG	-0.367567	0.041802	-8.792969***	
BS	-97.28736	3.314965	-29.34793***	
МТВ	0.118729	0.134994	0.879512	

J-statistic	46.38862
Prob(J-statistic)	0.374109

#### Table 23: STDE and LTDE effect on RoA

Dependent Variable: ROA			
Variable	Coefficient	STD. Error	t-Statistic
RoA(-1)	0.198644	0.003578	55.51048***
STDE	0.026684	0.004315	6.184647***
LTDE	0.002072	0.000144	14.36363***
FS	5.181200	0.452868	11.44086***
AGE	-0.660919	0.095309	-6.934504***
SG	-0.006546	0.001659	-3.946775***
BS	0.664521	0.091211	7.285568***
МТВ	-0.034742	0.001330	-26.11809***
J-statistic	50.41817		
Prob(J-statistic)	0.234593		
R-squared	0.279554		
Adjusted R-squared	0.187520		
F-statistic	3.037533***		

(\*\*\**p*<.01, \*\**p*<.05, \**p*<.1) Source: E-views 11

#### Table 24: STDE and LTDE effect on EPS

Dependent Variable: EPS			
Variable	Coefficient	STD. Error	t-Statistic

EPS(-1)	0.087569	0.003806	23.01062***
STDE	0.024425	0.002540	9.615319***
LTDE	0.002109	0.000205	10.29419***
FS	10.88666	0.208167	52.29787***
AGE	-0.426377	0.044133	-9.661252***
SG	0.004112	0.000441	9.319420***
BS	-0.163022	0.017480	-9.326269***
МТВ	-0.017923	0.001587	-11.29395***
J-statistic	45.58285		
Prob(J-statistic)	0.406063		
R-squared	0.580924		
Adjusted R-squared	0.574905		
F-statistic	96.51447***		

#### Table 25: STDE and LTDE effect on TOBQ

Dependent Variable: TOBIN_SQ			
Variable	Coefficient	STD. Error	t-Statistic
TOBIN_SQ(-1)	0.697283	0.010206	68.31825***
STDE	-0.000495	0.000461	-1.074192
LTDE	0.000304	6.59E-05	4.618642***
FS	-0.775458	0.070496	-10.99996***
AGE	0.055436	0.004889	11.33800***
SG	0.000831	0.000194	4.277431***
BS	0.214621	0.010396	20.64416***

МТВ	-0.003851	0.000992	-3.883087***
J-statistic	48.40897		
Prob(J-statistic)	0.299539		
R-squared	0.656447		
Adjusted R-squared	0.651513		
F-statistic	133.0368***		

#### Table 26: STDE and LTDE effect on EBIT

Dependent Variable: EBIT			
Variable	Coefficient	STD. Error	t-Statistic
EBIT(-1)	0.110473	0.002334	47.33297***
STDE	-0.120561	0.014513	-8.307346***
LTDE	0.009050	0.000843	10.72965***
FS	-42.17943	2.025053	-20.82880***
AGE	3.193631	0.202362	15.78176***
SG	-0.019023	0.003863	-4.924314***
BS	-10.53332	0.660405	-15.94979***
МТВ	-0.088610	0.008820	-10.04642***
J-statistic	45.20535		
Prob(J-statistic)	0.421398		
R-squared	0.106521		
Adjusted R-squared	0.093688		
F-statistic	8.300718***		

(\*\*\**p*<.01, \*\**p*<.05, \**p*<.1) Source: E-views 11

Dependent Variable: EBITDA				
Variable	Coefficient	STD. Error	t-Statistic	
EBITDA(-1)	-0.262799	0.000527	-499.0429***	
STDE	-1.294251	0.096301	-13.43971***	
LTDE	0.029646	0.010479	2.829080***	
FS	-16.54660	2.859853	-5.785822***	
AGE	22.11057	1.752552	12.61622***	
SG	0.045654	0.035782	1.275876	
BS	-100.4099	1.760791	-57.02548***	
МТВ	0.429484	0.182242	2.356672**	
J-statistic	49.25412			
Prob(J-statistic)	0.271032			
R-squared	0.319540			
Adjusted R-squared	0.309767			
F-statistic	32.69552***			

Table 27: STDE and LTDE effect on EBITDA

### Table 28: OLS output for hypothesis one with WGI

N/ 11		OTD F		
Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	36.38728	25.96110	1.401608	0.1615
-				
DER	-39.12459	5.079719	-7.702116	0.0000
VACC	-2.649357	3.638405	-0.728164	0.4668

PSVT	7.232693	5.756469	1.256446	0.2094
GVEF	9.313338	7.100744	1.311600	0.1901
REGQ	0.811817	14.09397	0.057600	0.9541
ROLA	10.29951	9.214390	1.117763	0.2640
DER*VACC	2.814560	0.756824	3.718911	0.0002
DER*PSVT	-8.316981	1.128518	-7.369828	0.0000
DER*GVEF	-1.364234	1.478470	-0.922734	0.3565
DER*REGQ	-11.34132	2.786911	-4.069494	0.0001
DER*ROLA	-15.04902	1.680624	-8.954429	0.0000
R-squared	0.686090			
Adjusted R-squared	0.681234			
F-statistic	141.2711			
Prob(F-statistic)	0.000000			

# Table 29: OLS output for hypothesis two with WGI

VariableCoefficientSTD. Errort-StatisticProb.C9.04387018.629650.4854560.6275DER2.7420473.6452000.7522350.4522VACC1.9259632.6109150.7376580.4610PSVT2.5821744.1308350.6250970.5321GVEF-3.5446145.095485-0.6956380.4669REGQ5.61049310.113820.5547360.5793DER*VACC1.0172090.5430961.8729820.0615DER*VACC1.0172090.5430961.8729820.0615DER*GVEF-2.2920891.060948-2.1604160.0311DER*REGQ2.9080821.9998841.4541260.1464					
C 9.043870 18.62965 0.485456 0.6275   DER 2.742047 3.645200 0.752235 0.4522   VACC 1.925963 2.610915 0.737658 0.4610   PSVT 2.582174 4.130835 0.625097 0.5321   GVEF -3.544614 5.095485 -0.695638 0.4869   REGQ 5.610493 10.11382 0.554736 0.5793   ROLA -0.248013 6.612235 -0.037508 0.9701   DER*VACC 1.017209 0.543096 1.872982 0.0615   DER*PSVT 0.296472 0.809823 0.366094 0.7144   DER*GVEF -2.292089 1.060948 -2.160416 0.0311   DER*REGQ 2.908082 1.999884 1.454126 0.1464	Variable	Coefficient	STD. Error	t-Statistic	Prob.
DER 2.742047 3.645200 0.752235 0.4522   VACC 1.925963 2.610915 0.737658 0.4610   PSVT 2.582174 4.130835 0.625097 0.5321   GVEF -3.544614 5.095485 -0.695638 0.4869   REGQ 5.610493 10.11382 0.554736 0.5793   ROLA -0.248013 6.612235 -0.037508 0.9701   DER*VACC 1.017209 0.543096 1.872982 0.0615   DER*PSVT 0.296472 0.809823 0.366094 0.7144   DER*GVEF -2.292089 1.060948 -2.160416 0.0311   DER*REGQ 2.908082 1.999884 1.454126 0.1464	C	9.043870	18.62965	0.485456	0.6275
VACC1.9259632.6109150.7376580.4610PSVT2.5821744.1308350.6250970.5321GVEF-3.5446145.095485-0.6956380.4869REGQ5.61049310.113820.5547360.5793ROLA-0.2480136.612235-0.0375080.9701DER*VACC1.0172090.5430961.8729820.0615DER*PSVT0.2964720.8098230.3660940.7144DER*GVEF-2.2920891.060948-2.1604160.0311DER*REGQ2.9080821.9998841.4541260.1464	DER	2.742047	3.645200	0.752235	0.4522
PSVT 2.582174 4.130835 0.625097 0.5321   GVEF -3.544614 5.095485 -0.695638 0.4869   REGQ 5.610493 10.11382 0.554736 0.5793   ROLA -0.248013 6.612235 -0.037508 0.9701   DER*VACC 1.017209 0.543096 1.872982 0.0615   DER*PSVT 0.296472 0.809823 0.366094 0.7144   DER*GVEF -2.292089 1.060948 -2.160416 0.0311   DER*REGQ 2.908082 1.999884 1.454126 0.1464	VACC	1.925963	2.610915	0.737658	0.4610
GVEF-3.5446145.095485-0.6956380.4869REGQ5.61049310.113820.5547360.5793ROLA-0.2480136.612235-0.0375080.9701DER*VACC1.0172090.5430961.8729820.0615DER*PSVT0.2964720.8098230.3660940.7144DER*GVEF-2.2920891.060948-2.1604160.0311DER*REGQ2.9080821.9998841.4541260.1464	PSVT	2.582174	4.130835	0.625097	0.5321
REGQ5.61049310.113820.5547360.5793ROLA-0.2480136.612235-0.0375080.9701DER*VACC1.0172090.5430961.8729820.0615DER*PSVT0.2964720.8098230.3660940.7144DER*GVEF-2.2920891.060948-2.1604160.0311DER*REGQ2.9080821.9998841.4541260.1464	GVEF	-3.544614	5.095485	-0.695638	0.4869
ROLA -0.248013 6.612235 -0.037508 0.9701   DER*VACC 1.017209 0.543096 1.872982 0.0615   DER*PSVT 0.296472 0.809823 0.366094 0.7144   DER*GVEF -2.292089 1.060948 -2.160416 0.0311   DER*REGQ 2.908082 1.999884 1.454126 0.1464	REGQ	5.610493	10.11382	0.554736	0.5793
DER*VACC 1.017209 0.543096 1.872982 0.0615   DER*PSVT 0.296472 0.809823 0.366094 0.7144   DER*GVEF -2.292089 1.060948 -2.160416 0.0311   DER*REGQ 2.908082 1.999884 1.454126 0.1464	ROLA	-0.248013	6.612235	-0.037508	0.9701
DER*PSVT 0.296472 0.809823 0.366094 0.7144   DER*GVEF -2.292089 1.060948 -2.160416 0.0311   DER*REGQ 2.908082 1.999884 1.454126 0.1464	DER*VACC	1.017209	0.543096	1.872982	0.0615
DER*GVEF -2.292089 1.060948 -2.160416 0.0311   DER*REGQ 2.908082 1.999884 1.454126 0.1464	DER*PSVT	0.296472	0.809823	0.366094	0.7144
DER*REGQ 2.908082 1.999884 1.454126 0.1464	DER*GVEF	-2.292089	1.060948	-2.160416	0.0311
	DER*REGQ	2.908082	1.999884	1.454126	0.1464

DER*ROLA	1.208392	1.206013	1.001972	0.3167
R-squared	0.114515			
Adjusted R-squared	0.100815			
F-statistic	8.359051			
Prob(F-statistic)	0.000000			

## Table 30: OLS output for hypothesis three with WGI

Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	1.986270	3.963149	0.501185	0.6164
DER	1.310471	0.775456	1.689936	0.0915
VACC	0.324663	0.555429	0.584527	0.5591
PSVT	0.428870	0.878767	0.488037	0.6257
GVEF	-0.257533	1.083980	-0.237581	0.8123
REGQ	-0.257605	2.151547	-0.119730	0.9047
ROLA	-0.074486	1.406643	-0.052953	0.9578
DER*VACC	0.166651	0.115535	1.442438	0.1496
DER*PSVT	-0.021189	0.172276	-0.122994	0.9021
DER*GVEF	-0.220026	0.225699	-0.974863	0.3300
DER*REGQ	0.832026	0.425442	1.955673	0.0509
DER*ROLA	0.701937	0.256559	2.735965	0.0064
R-squared	0.109919			
Adjusted R-squared	0.096149			
F-statistic	7.982193			
Prob(F-statistic)	0.000000			

Source: E-views 11

Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	189.1320	70.02257	2.701014	0.0071
DER	-90.05686	13.70108	-6.572977	0.0000
VACC	11.64093	9.813548	1.186210	0.2359
PSVT	41.93908	15.52642	2.701143	0.0071
GVEF	6.405635	19.15221	0.334459	0.7381
REGQ	55.20250	38.01442	1.452146	0.1469
ROLA	40.75993	24.85316	1.640030	0.1014
DER*VACC	-4.008593	2.041314	-1.963732	0.0500
DER*PSVT	-18.65714	3.043851	-6.129453	0.0000
DER*GVEF	-0.038840	3.987746	-0.009740	0.9922
DER*REGQ	-32.74287	7.516889	-4.355908	0.0000
DER*ROLA	-25.36045	4.532997	-5.594631	0.0000
R-squared	0.308147			
Adjusted R-squared	0.297443			
F-statistic	28.78863			
Prob(F-statistic)	0.000000			

# Table 31: OLS output for hypothesis four with WGI

Source: E-views 11

Table 32: OLS output for hypothesis five with WGI

Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	1696.870	985.4450	1.721932	0.0855
DER	-542.7422	192.8187	-2.814781	0.0050
VACC	-185.1339	138.1085	-1.340496	0.1805
PSVT	454.1831	218.5071	2.078574	0.0380
GVEF	78.31694	269.5338	0.290564	0.7715
REGQ	330.4153	534.9864	0.617614	0.5370

ROLA	496.1604	349.7647	1.418555	0.1565
DER*VACC	112.1859	28.72791	3.905119	0.0001
DER*PSVT	-169.0160	42.83687	-3.945574	0.0001
DER*GVEF	-75.51907	56.12053	-1.345658	0.1788
DER*REGQ	-26.32214	105.7870	-0.248822	0.8036
DER*ROLA	-154.1359	63.79400	-2.416151	0.0159
R-squared	0.195674			
Adjusted R-squared	0.183230			
F-statistic	15.72454			
Prob(F-statistic)	0.000000			

# Table 33: OLS output for hypothesis six with WGI

Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	0.549281	0.203037	2.705329	0.0070
TSD	4.72E-07	4.49E-07	1.051579	0.2934
VACC	0.080780	0.028521	2.832265	0.0048
PSVT	0.106997	0.044959	2.379885	0.0176
GVEF	-0.090387	0.055730	-1.621870	0.1053
REGQ	0.283679	0.110282	2.572294	0.0103
ROLA	0.149829	0.072438	2.068368	0.0390
DER*VACC	-0.117229	0.003766	-31.12747	0.0000
DER*PSVT	-0.192367	0.004502	-42.72533	0.0000
DER*GVEF	0.173625	0.010186	17.04622	0.0000
DER*REGQ	-0.524161	0.006352	-82.51440	0.0000
DER*ROLA	-0.296692	0.005969	-49.70705	0.0000
R-squared	0.912834			
Adjusted R-squared	0.908131			

F-statistic	33.59467		
Prob(F-statistic)	0.000000		

## Table 34: OLS output for hypothesis seven with WGI

Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	5.077354	4.155505	1.221838	0.2222
TSD	-1.25E-06	9.19E-06	-0.135945	0.8919
VACC	0.551969	0.583736	0.945579	0.3447
PSVT	1.063645	0.920162	1.155933	0.2482
GVEF	-1.004795	1.140618	-0.880922	0.3787
REGQ	1.219494	2.257124	0.540287	0.5892
ROLA	1.180284	1.482577	0.796103	0.4263
DER*VACC	-0.049818	0.077079	-0.646314	0.5183
DER*PSVT	-0.255767	0.092150	-2.775562	0.0057
DER*GVEF	-0.015733	0.208465	-0.075469	0.9399
DER*REGQ	0.110133	0.130012	0.847100	0.3973
DER*ROLA	0.391461	0.122162	3.204440	0.0014
R-squared	0.075766			
Adjusted R-squared	0.059235			
F-statistic	4.583236			
Prob(F-statistic)	0.000001			

Source: E-views 11

Table 35: OLS output for hypothesis eight with WGI

Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	0.687825	0.190065	3.618887	0.0003
ETR	-1.81E-06	1.38E-05	-0.130593	0.8961

VACC	0.093107	0.026684	3.489305	0.0005
PSVT	0.133468	0.042224	3.160929	0.0016
GVEF	-0.123279	0.052296	-2.357332	0.0187
REGQ	0.361268	0.103258	3.498697	0.0005
ROLA	0.198545	0.067680	2.933569	0.0035
DER*VACC	-0.114715	0.003570	-32.13487	0.0000
DER*PSVT	-0.193110	0.004119	-46.87785	0.0000
DER*GVEF	0.175720	0.008702	20.19325	0.0000
DER*REGQ	-0.526339	0.005807	-90.64101	0.0000
DER*ROLA	-0.296831	0.005481	-54.15585	0.0000
R-squared	0.979838			
Adjusted R-squared	0.959835			
F-statistic	39.89215			
Prob(F-statistic)	0.000000			

Table 36: OLS output for hypothesis nine with WGI

Variable	Coefficient	STD, Frror	t-Statistic	Prob.
v dhabio	Coontoiont	OTD. End	l'oldiolo	1105.
С	2.865998	3.937902	0.727798	0.4670
ETR	3.88E-05	0.000287	0.135486	0.8923
VACC	0.441868	0.552849	0.799256	0.4244
PSVT	0.599866	0.874829	0.685695	0.4931
GVEF	-0.410696	1.083507	-0.379043	0.7048
REGQ	0.203129	2.139363	0.094949	0.9244
ROLA	0.177246	1.402245	0.126401	0.8994
DER*VACC	0.016793	0.073962	0.227056	0.8204
DER*PSVT	-0.274534	0.085349	-3.216597	0.0014
DER*GVEF	0.010050	0.180292	0.055745	0.9556

DER*REGQ	0.142413	0.120310	1.183717	0.2369
DER*ROLA	0.313131	0.113560	2.757401	0.0060
	0.400007		l	
R-squared	0.106367			
Adjusted R-squared	0.092542			
F-statistic	7.693539			
Prob(F-statistic)	0.000000			

# Table 37: OLS output for hypothesis ten with WGI

	0	070 -		<b></b>
Variable	Coefficient	SID. Error	t-Statistic	Prob.
С	36.36194	26.01950	1.397488	0.1627
DER	-39.10790	5.106843	-7.657940	0.0000
ETR	3.06E-05	0.001888	0.016197	0.9871
DER*ETR	1.72E-05	0.000472	0.036369	0.9710
VACC	-2.641996	3.660710	-0.721717	0.4707
PSVT	7.228396	5.767715	1.253251	0.2105
GVEF	9.313345	7.122336	1.307625	0.1914
REGQ	0.799279	14.12681	0.056579	0.9549
ROLA	10.28722	9.237928	1.113585	0.2658
DER*VACC	2.808168	0.780271	3.598962	0.0003
DER*PSVT	-8.316685	1.130187	-7.358683	0.0000
DER*GVEF	-1.367029	1.482380	-0.922185	0.3567
DER*REGQ	-11.32949	2.809027	-4.033245	0.0001
DER*ROLA	-15.03530	1.723731	-8.722530	0.0000
R-squared	0.686091			
Adjusted R-squared	0.680335			
F-statistic	119.2012			
Prob(F-statistic)	0.000000			

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Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	10.54433	17.94961	0.587441	0.5571
DER	0.387868	3.522966	0.110097	0.9124
ETR	-0.000379	0.001302	-0.291297	0.7709
DER*ETR	-0.002479	0.000326	-7.606559	0.0000
VACC	0.387968	2.525348	0.153629	0.8779
PSVT	2.812122	3.978870	0.706764	0.4799
GVEF	-2.717604	4.913359	-0.553105	0.5804
REGQ	6.157176	9.745407	0.631803	0.5277
ROLA	0.685922	6.372804	0.107633	0.9143
DER*VACC	1.991940	0.538272	3.700620	0.0002
DER*PSVT	0.236645	0.779662	0.303522	0.7616
DER*GVEF	-1.917737	1.022623	-1.875312	0.0612
DER*REGQ	1.244077	1.937813	0.642001	0.5211
DER*ROLA	-0.738647	1.189119	-0.621171	0.5347
R-squared	0.181669			
Adjusted R-squared	0.166664			
F-statistic	12.10751			
Prob(F-statistic)	0.000000			

## Table 38: OLS output for hypothesis eleven with WGI

Source: E-views 11

# Table 39: OLS output for hypothesis twelve with WGI

Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	2.374981	3.813086	0.622850	0.5336
DER	0.798221	0.748394	1.066579	0.2865

ETR	-0.000201	0.000277	-0.724858	0.4688
DER*ETR	-0.000538	6.92E-05	-7.767401	0.0000
VACC	0.004988	0.536467	0.009297	0.9926
PSVT	0.490185	0.845243	0.579934	0.5621
GVEF	-0.102415	1.043759	-0.098122	0.9219
REGQ	-0.102000	2.070244	-0.049269	0.9607
ROLA	0.152692	1.353793	0.112789	0.9102
DER*VACC	0.376556	0.114347	3.293111	0.0010
DER*PSVT	-0.033667	0.165626	-0.203271	0.8390
DER*GVEF	-0.137969	0.217239	-0.635102	0.5256
DER*REGQ	0.469833	0.411655	1.141326	0.2541
DER*ROLA	0.278589	0.252608	1.102851	0.2705
R-squared	0.179745			
Adjusted R-squared	0.164705			
F-statistic	11.95120			
Prob(F-statistic)	0.000000			

# Table 40: OLS output for hypothesis thirteen with WGI

Variable	Coefficient	STD. Error	t-Statistic	Prob.
C	190.1715	69.96706	2.718015	0.0067
DER	-92.51645	13.73242	-6.737082	0.0000
ETR	0.000605	0.005077	0.119192	0.9052
DER*ETR	-0.002604	0.001270	-2.049841	0.0407
VACC	9.906928	9.843736	1.006419	0.3146
PSVT	42.08358	15.50952	2.713403	0.0068
GVEF	7.480444	19.15213	0.390580	0.6962
REGQ	55.46259	37.98732	1.460029	0.1447

ROLA	41.53231	24.84101	1.671925	0.0950
DER*VACC	-2.971640	2.098168	-1.416302	0.1571
DER*PSVT	-18.72423	3.039099	-6.161113	0.0000
DER*GVEF	0.347173	3.986155	0.087095	0.9306
DER*REGQ	-34.48038	7.553540	-4.564797	0.0000
DER*ROLA	-27.39731	4.635154	-5.910766	0.0000
R-squared	0.312343			
Adjusted R-squared	0.299734			
F-statistic	24.77204			
Prob(F-statistic)	0.000000			

## Table 41: OLS output for hypothesis fourteen with WGI

Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	1687.898	987.6239	1.709050	0.0879
DER	-539.9375	193.8408	-2.785469	0.0055
ETR	0.014075	0.071661	0.196413	0.8443
DER*ETR	0.002762	0.017930	0.154054	0.8776
VACC	-185.0311	138.9498	-1.331640	0.1834
PSVT	452.6069	218.9255	2.067401	0.0391
GVEF	80.19874	270.3430	0.296656	0.7668
REGQ	325.5325	536.2121	0.607096	0.5440
ROLA	492.2813	350.6446	1.403932	0.1608
DER*VACC	111.2774	29.61681	3.757236	0.0002
DER*PSVT	-169.0071	42.89856	-3.939691	0.0001
DER*GVEF	-76.03446	56.26679	-1.351320	0.1770
DER*REGQ	-24.32595	106.6224	-0.228150	0.8196
DER*ROLA	-151.8522	65.42777	-2.320914	0.0206

R-squared	0.195738		
Adjusted R-squared	0.180991		
F-statistic	13.27333		
Prob(F-statistic)	0.000000		

Hypothesis 1		Hypothesis 2		Hypothesis 3		Hypothesis 4		Hypothesis 5	
Dependent Varia	able: RoA	Dependent Variable: I	EPS	Dependent Variable:	Tobin's Q	Dependent Variable:	EBIT	Dependent Variable:	EBITDA
Variable	Coefficient	Variable	Coefficient	Variable	Coefficient	Variable	Coefficient	Variable	Coefficient
С	-6.0097	С	- 14.5839***	С	3.4750*	С	-24.3216*	С	- 276.9680*
DER	2.0777***	DER	0.1225**	DER	0.0261**	DER	2.3656***	DER	- 12.2130***
FS	0.5387	FS	1.0918***	FS	-0.1883	FS	2.1109**	FS	13.6729
AGE	0.0467	AGE	-0.0166	AGE	0.0392**	AGE	0.0692	AGE	1.3179
SG	0.0007	SG	0.001	SG	0.0007	SG	0.0066	SG	0.0215
BS	-0.208	BS	-0.0933	BS	0.0079	BS	-0.9193	BS	5.4177
MTB	0.007	МТВ	-0.0003	MTB	0.007	МТВ	0.0069	MTB	0.0472
R-squared	0.4203	R-squared	0.0431	R-squared	0.5521	R-squared	0.1548	R-squared	0.0306
Adjusted R- squared	0.4141	Adjusted R-squared	0.0328	Adjusted R-squared	0.4969	Adjusted R-squared	0.1457	Adjusted R-squared	0.0202
F-statistic	67.5460***	F-statistic	4.1942***	F-statistic	9.9991***	F-statistic	17.0581***	F-statistic	2.9442**

#### Table 42 MODEL RESULTS FOR HYPOTHESES 1 – 5

#### Table 43 MODEL RESULTS FOR HYPOTHESES 6 – 9

Hypothesis 6		Hypothesis 7		Hypothesis 8		Hypothesis 9	
Dependent Variab	ent Variable: DER Dependent Variable: Tobin's Q Depen		Dependent Vari	Dependent Variable: DER		Dependent Variable: Tobin's Q	
Variable	Coefficient	Variable	Coefficient	Variable	Coefficient	Variable	Coefficient

С	-7.2086	С	3.4009*	С	-6.2228*	С	2.1596**
TSD	0.0107***	TSD	0.0004**	ETR	-0.0108***	ETR	-0.0003
FS	0.4831	FS	-0.1835	FS	0.4954**	FS	-0.0342
AGE	-0.021	AGE	0.0391**	AGE	-0.0173	AGE	0.0039
SG	0.001	SG	0.001	SG	0.0014	SG	0.0001
BS	-0.0082	BS	0.0077	BS	-0.0967	BS	-0.0114
MTB	0.0001	МТВ	0.0001	МТВ	0.0027	МТВ	0.0001
R-squared	0.7644	R-squared	0.5528	R-squared	0.0665	R-squared	0.0024
Adjusted R-squared	0.7353	Adjusted R-squared	0.4976	Adjusted R-squared	0.0565	Adjusted R-squared	-0.0083
F-statistic	26.3205***	F-statistic	10.0276***	F-statistic	6.6397***	F-statistic	0.2254

#### Table 44 MODEL RESULTS FOR HYPOTHESES 10 – 14

Hypothesis 10		Hypothesis 11		Hypothesis 12	Hypothesis 12		Hypothesis 13		Hypothesis 14	
Dependent Variable: RoA		Dependent Variable: EPS		Dependent Variable: Tobin's Q		Dependent Variable: EBIT		Dependent Variable: EBITDA		
Variable	Coefficient	Variable	Coefficient	Variable	Coefficient	Variable	Coefficient	Variable	Coefficient	
С	-2.969	С	-14.3126***	С	2.4740**	С	-24.6589*	С	-278.7180*	
DER	1.3600***	DER	0.2174***	DER	0.0627***	DER	2.2193***	DER	-20.4621***	
ETR	0.0022	ETR	-0.0051**	ETR	-0.0009*	ETR	-0.0017	ETR	0.0961	
DER*ETR	0.0048***	DER*ETR	-0.0008***	DER*ETR	-0.0002***	DER*ETR	0.001	DER*ETR	0.0690***	

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FS	-0.118	FS	1.0700***	FS	-0.0559	FS	2.1800**	FS	16.1
AGE	0.2772	AGE	-0.0127	AGE	0.0035	AGE	0.0626	AGE	0.9227
SG	-0.0021	SG	0.001	SG	0.001	SG	0.0065	SG	0.0196
BS	0.0006	BS	-0.0937	BS	-0.009	BS	-0.9547	BS	3.5008
МТВ	0.002	МТВ	-0.0007	MTB	-0.0001	MTB	0.0075	МТВ	0.1
R-squared	0.5562	R-squared	0.067	R-squared	0.0493	R-squared	0.1554	R-squared	0.0493
Adjusted R-squared	0.4995	Adjusted R-squared	0.0536	Adjusted R-squared	0.0357	Adjusted R-squared	0.1433	Adjusted R-squared	0.0356
F-statistic	9.8113***	F-statistic	4.9987***	F-statistic	3.6138***	F-statistic	12.8107***	F-statistic	3.6079***

Table 45: AR Test for Model 1-14.

Model	AR(1)				AR(2)			
	m-stat	rho	SE(rho)	Prob.	m-stat	rho	SE(rho)	Prob.
1	-1.244	-78403.4	63039.5	0.014	-1.058	-11078.9	10470.8	0.090
2	-2.190	-4892.8	2233.8	0.029	-1.169	-539.5	461.5	0.242
3	-3.104	-290.0	93.4	0.002	-2.365	-60.1	25.4	0.018
4	-1.269	-361320.2	284669.7	0.004	0.092	2274.9	24725.7	0.927

A single table presenting the AR test results for Models 1-14:

Model	AR(1)				AR(2)			
5	-1.269	-83076656.3	65451742.3	0.004	1.069	6713330.3	6277889.2	0.285
6	-2.129	-1607.2	754.8	0.033	-1.724	-1100.4	638.3	0.085
7	-3.362	-290.9	86.5	0.001	-2.550	-59.1	23.2	0.011
8	-2.251	-5647.1	2508.2	0.024	-1.393	-2348.5	1686.0	0.164
9	-3.115	-294.2	94.5	0.002	-2.555	-58.6	22.9	0.011
10	-1.108	-63650.7	57440.7	0.028	-0.680	-9451.4	13898.0	0.497
11	-3.108	-4298.9	67440.7*	0.018	-2.680	-578.9	33898.0*	0.097
12	-2.811	-276.3	98.3	0.005	-2.338	-61.5	26.3	0.019
13	-1.243	-359347.6	288990.5	0.014	0.116	2759.4	23750.5	0.908
14	-1.262	-82044574.7	65023523.8	0.007	1.097	8258466.6	7530135.8	0.073

		Tobin's Q	ROA	EBITDA	EBIT	EPS	PAT	TSD	ETR	DER
Tobin's Q	Pearson's r	—								2
	p-value									
ROA	Pearson's r	0.276 ***								
	p-value	< .001								
EBITDA	Pearson's r	-0.017	0.243 ***							
	p-value	0.646	< .001	<u> </u>						
EBIT	Pearson's r	0.163 ***	0.622 ***	0.222 ***						
	p-value	< .001	< .001	< .001	( <u> </u>					
EPS	Pearson's r	0.241 ***	0.255 ***	-0.003	0.144 ***	_				
	p-value	< .001	< .001	0.942	< .001					
PAT	Pearson's r	0.102 **	0.242 ***	0.070	0.149 ***	0.477 ***	_			
	p-value	0.006	< .001	0.061	< .001	< .001				
TSD	Pearson's r	0.064	0.087*	-0.003	0.011	0.088*	0.031	_		
	p-value	0.088	0.020	0.928	0.767	0.019	0.402			
FTD	Pearson's	0.040	-0.022	0.015	-0.014	0.027	0.018	-0.028	_	
	p-value	0.290	0.548	0.682	0.707	0.470	0.632	0.459		
DER	Pearson's r	0.298 ***	0.693 ***	-0.127 ***	0.427 ***	0.311 ***	0.258 ***	0.079*	-0.044	
	p-value	< .001	< .001	< .001	< .001	< .001	< .001	0.035	0.242	

Table 46: Correlation matrix for all variables showing the relationship among variables of the study

Note. \* p < .05, \*\* p < .01, \*\*\* p < .001

Table 47: Model coefficients showing the predictive effects of DER on RoA, Earning per share (EPS), Tobin's Q, EBIT and Earnings before interest, tax, depreciation and amortisation (EBITDA) as performance parameters.

Model Coefficient Predictor: DER					
Criterion	Estimate	SE	t	Р	
Intercept	2.53	0.4386	5.78	<.001	
RoA	2.12	0.0825	25.74	<.001	
Intercept	2.240	0.2490	9.00	<.001	
EPS	0.410	0.0468	8.74	<.001	
Intercept	1.5478	0.05297	29.22	<.001	

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Tobin'sQ	0.0834	0.00997	8.36	<.001
Intercept	5.24	1.005	5.22	<.001
EBIT	2.39	0.189	12.64	<.001
Intercept	36.16	14.43	2.51	0.012
EBITDA	-9.29	2.71	-3.42	<.001

Table 48 Model coefficients showing the predictive effects of the Term Structure of debt (TSD) on DER and the Term Structure of debt (TSD) on Tobin's Q.

Model Coefficient Predictor – Term structure of debt (TSD)

Predictor	Estimate	SE	t	Р
Intercept	-0.673	0.593	-1.13	0.257
DER	0.860	0.408	2.11	0.035
Intercept	1.323	0.166	7.97	<.001
Tobin'sQ	0.195	0.114	1.71	0.088

Table 49: Model coefficients showing the predictive effects of Effective tax rate on Debt-toequity ratio and Tobin's Q

Model Coefficient Predictor: Effective tax rate

Predictor	Estimate	SE	Т	Р
Intercept	0.5809	0.2176	2.669	0.008
DER	-0.0272	0.0339	-0.802	0.423
Intercept	1.60650	0.06082	26.414	<.001
Tobin's Q	-0.00609	0.00948	-0.642	0.521

Table 50: Model coefficients showing the moderation effects of ETR on the relationship between DER and RoA, DER and Earnings-per-share (EPS), DER and Tobin's Q, DER and EBIT, and DER and Earnings before interest, tax, depreciation and amortisation (EBITDA)

		95%	<b>Confidence</b>	Interval		
Estim	nate	SE	Lower	Upper	Z	Р
DER	2.1106	0.0802	1.953	2.2678	26.32	<.001
ETR	-0.0843	0.0669	-0.215	0.0469	-1.26	0.208
DER*ETR*RoA	-0.1347	0.0206	-0.175	-0.0944	-6.54	<.001
DER	0.4097	0.0466	0.318	0.5011	8.783	<.001
ETR	0.0289	0.0389	-0.047	0.1052	0.742	0.458
DER*ETR*EPS	-0.0205	0.0120	-0.043	0.0030	-1.707	0.088
DER	0.0822	0.0098	0.062	0.1016	8.31	<.001
ETR	-0.0121	0.0082	-0.028	0.0040	-1.47	0.142
DER*ETR*TbnQ	-0.0077	0.0025	-0.012	-0.0026	-3.02	0.003
DER	2.3769	0.1879	2.009	2.7452	12.650	<.001
ETR	-0.0846	0.1568	-0.392	0.2229	-0.539	0.590
DER*ETR*EBIT	-0.1370	0.0483	-0.232	-0.0424	-2.838	0.005
DER	-9.530	2.6874	0.318	0.5011	-3.545	<.001
ETR	-1.372	2.2438	-0.047	0.1052	-0.611	0.541
DER*ETR*EBITDA	-2.554	0.6906	-0.044	0.0030	-3.690	<.001

Moderation Estimates of ETR for RoA, EPS, Tobin's Q, EBIT & EBITDA

Table 51: HST summary for hypotheses 1-5

$X^2$	ROA	EPS	Tobin's Q	EBIT	EBITDA
Without CVs	1.857222	10.009830***	11.198856***	0.012098	0.264077
With CVs	4.079732	4.666000	10.875293*	7.384330	3.646306

Source: Eviews 11 (\*\*\* p<.01, \*\* p<.05, \* p<.1)

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Table 52: HST summary for hy	potheses 6-9
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$X^2$	DER	Tobin's Q	DER	Tobin's Q
Without CVs	18.408676***	13.349648***	1.738071	0.266598
With CVs	44.254343***	13.926573**	5.020689	4.659147

Table 53: Moderation HST summary for hypotheses 10-14

$X^2$	ROA	EPS	Tobin's Q	EBIT	EBITDA
Without CVs	28.458899***	10.403626**	14.762646***	3.710953	7.981654**
With CVs	20.401041**	4.601483	4.409392	4.908045	4.968102

Table 54: REM summary for Hypotheses 1-2

Dependen	t Variable: I	RoA			Dependen	t Variable: I	EPS		
Variable	Coefficie nt	STD. Error	t- Statisti c	Prob	Variable	Coefficie nt	STD. Error	t- Statisti c	Prob
С	-6.00974	5.4059	- 1.1117	0.26 67	С	-14.5839	4.84481 6	3.0102	0.00 27
DER	2.077747	0.10600 9	19.599 65	0	DER	0.122529	0.03947	3.1043 38	0.00 2
FS	0.538727	0.36235	1.4867 57	0.13 76	FS	1.091787	0.30468 1	3.5833 76	$\begin{array}{c} 0.00\\ 04 \end{array}$
AGE	0.046726	0.04723 3	0.9892 66	0.32 3	AGE	-0.01655	0.04217 5	- 0.3925	0.69 48
SG	0.000685	0.00702 6	0.0975 52	0.92 23	SG	0.001006	0.00237 4	0.4238 79	0.67 18
BS	-0.20795	0.24730 6	- 0.8408 6	0.40 08	BS	-0.09334	0.12048 7	- 0.7747 1	0.43 88
MTB	0.007027	0.01066 4	0.6589 89	0.51 02	MTB	-0.00029	0.00360 1	- 0.0790 5	0.93 7

$\mathbb{R}^2$	0.420291	$\mathbb{R}^2$	0.043079
Adjuste d R <sup>2</sup>	0.414068	Adjuste d R <sup>2</sup>	0.032808
F-	67.54604	F-	4.194226
statistic	***	statistic	***
~ T		1 \	

Dependent Variable: Tobin's	Q			
Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	3.475047	2.029929	1.711905	0.0875
DER	0.026094	0.010273	2.540103	0.0114
FS	-0.18831	0.135286	-1.39191	0.1646
AGE	0.039227	0.017286	2.26932	0.0237
SG	-4.44E-05	0.000612	-0.0726	0.9422
BS	0.007887	0.0331	0.238291	0.8118
MTB	9.88E-06	0.000926	0.010665	0.9915
R <sup>2</sup>	0.55207			
Adjusted R <sup>2</sup>	0.496858			
F-statistic	9.999088***			
Courses Externa 11 (***	01 * * = < 05 * = <	< 1)		

Table 55: FEM summary for Hypothesis 3.

Table 50: KEIVI summary 101	r nypotneses 4	-J
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Dependent Variable:	EBIT				Dependent Variab	le: EBITDA			
Variable	Coefficient	STD. Error	t-Statistic	Prob.	Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	-24.3216	13.91585	-1.74776	0.0811	С	-276.968	164.0311	-1.68851	0.0919
DER	2.365595	0.249127	9.495549	0	DER	-12.213	3.483028	-3.50644	0.0005
FS	2.110882	0.922338	2.288621	0.0225	FS	13.67289	11.10325	1.231431	0.2187
AGE	0.069165	0.121956	0.567129	0.5709	AGE	1.317894	1.428305	0.922698	0.3566
SG	6.56E-03	0.016146	0.406049	0.6849	SG	2.15E-02	0.236735	0.090997	0.9275
BS	-0.91932	0.607668	-1.51287	0.1309	BS	5.417671	7.78452	0.695954	0.4867
MTB	6.94E-03	0.024511	0.283142	0.7772	MTB	4.72E-02	0.359106	0.131466	0.8955
$\mathbb{R}^2$	0.154758				$\mathbb{R}^2$	0.030634			
Adjusted R <sup>2</sup>	0.145685				Adjusted R <sup>2</sup>	0.020229			
F-statistic	17.05813***				F-statistic	2.944237**			

Table 57: FEM summary for hypotheses 6-7

Dependent Variable: I	DER				Dependent Variable:	Tobin's Q			
Variable	Coefficient	STD. Error	t-Statistic	Prob.	Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	-7.20862	5.408536	-1.33282	0.1832	С	3.40091	2.024775	1.679649	0.0936
									461

TSD	0.010676	0.000371	28.76082	0	TSD	0.000374	0.000139	2.693184	0.0073
FS	0.48305	0.360451	1.340129	0.1808	FS	-0.18347	0.134941	-1.3596	0.1746
AGE	-0.02103	0.046129	-0.45582	0.6487	AGE	0.039149	0.017269	2.266952	0.0238
SG	9.73E-04	0.001632	0.596028	0.5514	SG	-2.30E-05	0.000611	-0.03771	0.9699
BS	-0.00818	0.088345	-0.09256	0.9263	BS	0.007699	0.033073	0.232784	0.816
MTB	9.85E-05	0.002473	0.039832	0.9682	MTB	-1.45E-05	0.000926	-0.01571	0.9875
$\mathbb{R}^2$	0.764388				$\mathbb{R}^2$	0.552773			
Adjusted R <sup>2</sup>	0.735347				Adjusted R <sup>2</sup>	0.497648			
F-statistic	26.32045***				F-statistic	10.02757***			

Table 58: REM summary for hypotheses 8-9

Dependent Variable: D	DER				Dependent Varial	ble: Tobin's Q			
Variable	Coefficient	STD. Error	t-Statistic	Prob.	Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	-6.22277	3.242622	-1.91905	0.0555	С	2.159567	1.0583	2.0406	0.0418
ETR	-0.0108	0.00185	-5.83547	0	ETR	-0.00034	0.000448	-0.76467	0.4448
FS	0.495369	0.207027	2.392773	0.0171	FS	-0.03424	0.066551	-0.51456	0.6071
AGE	-0.01726	0.028617	-0.60314	0.5467	AGE	0.003916	0.009295	0.421271	0.6737
SG	1.35E-03	0.002529	0.533534	0.5939	SG	6.37E-05	0.000608	0.104724	0.9166
BS	-0.09665	0.11395	-0.84822	0.3967	BS	-0.01135	0.029914	-0.37951	0.7045
MTB	2.71E-03	0.003838	0.706318	0.4803	MTB	1.13E-04	0.000923	0.122208	0.9028

R <sup>2</sup>	0.066526	$\mathbb{R}^2$	0.002414	
Adjusted R <sup>2</sup>	0.056506	Adjusted R <sup>2</sup>	-0.00829	
F-statistic	6.63967***	F-statistic	0.225431	

Table 59: FEM summary for hypothesis 10

Dependent Variable: RoA				
Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	-2.96899	23.86948	-0.12438	0.9011
DER	1.360004	0.154494	8.802939	0
ETR	0.002181	0.005997	0.363586	0.7163
DER*ETR	0.004776	0.000686	6.959131	0
FS	-1.18E-01	1.591088	-0.07426	0.9408
AGE	0.27724	0.203203	1.364351	0.1731
SG	-2.08E-03	0.007182	-0.2902	0.7718
BS	0.000611	0.388865	0.001572	0.9987
MTB	0.002047	0.010889	0.188013	0.8509
$\mathbb{R}^2$	0.556214			
Adjusted R <sup>2</sup>	0.499523			
F-statistic	9.811304***			

Dependent Variable: I	EPS				Dependent Variable:	Tobin's Q			
Variable	Coefficient	STD. Error	t-Statistic	Prob.	Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	-14.3126	4.841632	-2.95614	0.0032	С	2.474045	0.960028	2.577055	0.0102
DER	0.217434	0.049868	4.360181	0	DER	0.062685	0.012496	5.016182	0
ETR	-0.00507	0.001953	-2.59495	0.0097	ETR	-0.0009	0.000493	-1.81267	0.0704
DER*ETR	-0.00081	0.000224	-3.59924	0.0003	DER*ETR	-0.00024	5.66E-05	-4.28719	0
FS	1.07E+00	0.304769	3.50661	0.0005	FS	-5.59E-02	0.060599	-0.92302	0.3564
AGE	-0.01266	0.04212	-0.30057	0.7639	AGE	0.003456	0.008431	0.409921	0.682
SG	9.67E-04	0.00235	0.4117	0.6807	SG	2.79E-05	0.000597	0.046823	0.9627
BS	-0.0937	0.119481	-0.78419	0.4333	BS	-0.00899	0.028778	-0.31249	0.7548
MTB	-0.00074	0.003566	-0.20831	0.8351	MTB	-6.19E-05	0.000906	-0.06831	0.9456
$\mathbb{R}^2$	0.066986				$\mathbb{R}^2$	0.049343			
Adjusted R <sup>2</sup>	0.053585				Adjusted R <sup>2</sup>	0.035689			
F-statistic	4.998748***				F-statistic	3.61383***			

## Table 60: REM summary for hypotheses 11-12

Dependent Variable: EBIT					Dependent Variable: EBITDA				
Variable	Coefficient	STD. Error	t-Statistic	Prob.	Variable	Coefficient	STD. Error	t-Statistic	Prob.
С	-24.6589	14.06713	-1.75294	0.0802	С	-278.718	162.3316	-1.71697	0.0865
DER	2.219291	0.31343	7.08067	0	DER	-20.4621	4.281398	-4.7793	0
ETR	-0.00174	0.012951	-0.13419	0.8933	ETR	0.096054	0.1824	0.526614	0.5987
DER*ETR	0.001016	1.50E-03	0.6757	0.4995	DER*ETR	0.068993	2.14E-02	3.219928	0.0014
FS	2.18E+00	0.935313	2.327569	0.0203	FS	1.61E+01	11.04447	1.461179	0.1445
AGE	0.062647	0.123426	0.507568	0.612	AGE	0.922679	1.416588	0.651339	0.5151
SG	6.54E-03	0.016173	0.404074	0.6863	SG	1.96E-02	0.2335	0.083993	0.9331
BS	-0.95472	0.612034	-1.55991	0.1193	BS	3.500765	7.699585	0.454669	0.6495
MTB	7.48E-03	0.024567	0.304471	0.7609	MTB	1.00E-01	0.354534	0.28304	0.7773
<b>R</b> <sup>2</sup>	0.155403				R-squared	0.049266			
Adjusted R <sup>2</sup>	0.143272				Adjusted R-squared	0.035611			
F-statistic	12.81072***				F-statistic	3.607859***			

Table 61: REM summary for hypotheses 13-14