

## WORKING CAPITAL AND TAX PAYABLE: ANALYSIS OF INTERRELATIONSHIP IN MANUFACTURING COMPANIES

UDC 330.142.212:336.22]:658.5

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**Abstract.** *Most of the manufacturing firms are blamed for the inability to fulfill their obligations to the government on working capital inadequacy and ineffective plan, control and monitoring which led to business failures, and profitability reduction which invariably reduced tax payable to the government in the past. To this effect, therefore, this study examined working capital effect on tax payable in Nigeria manufacturing companies. Ten manufacturing companies were selected from listed manufacturing companies in the Nigeria stock exchange jurisdiction from 2010 to 2022. The data sourced were: receivable, inventory, payable, profit before tax, and the firm size (the net asset of the companies) from published annual financial statement from 2010 to 2022. After the data arrangement, we employed panel data analysis to gauge working capital effect on tax payable in Nigerian manufacturing companies. We conducted unit root test (Panel) to examine the stationarity of the variables. Pearson correlation, panel regression analysis, Feasible Generalized Least Squares (FGLS), and other post estimation tests like autocorrelation, heteroskedasticity test, and Hausman test was also launched to gauge the model suitability between random and fixed effect while Breusch – Pagan LM was further launched to select between random and Pooled OLS. The outcome shows that receivable, inventory, and payable are favourably significant to TAXPAB which ultimately divulges the significance of working capital components on tax payable. Conclusively, working capital significantly, statistically and progressively influences tax payable in Nigeria manufacturing companies. We further recommended that more efforts should be expended by manufacturing companies to effectively utilize their working capital in their custody because a good exploitation of working capital enhances company's profitability and augments the strength for markets competitiveness, firm value, and shareholders' wealth.*

**Key words:** *Tax payable, Manufacturing companies, Working Capital, Receivable, Payable, Cash and Cash Equivalent, Inventory.*

**JEL Classification:** H25; L66; G32; G31

Received February 11, 2023 / Revised March 12, 2024 / Accepted March 25, 2024

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## 1. INTRODUCTION

Regardless of the level of government participation, all countries have three major sectors of their economies: the primary (extraction), manufacturing, and the service sectors. Out of these sectors, manufacturing companies (sector) are the producers of a country's total output. The significance of the manufacturing sector cannot be overemphasized in term of raw materials processing and conversion from raw to finished products. Manufacturing involves the conversion of raw materials into finished consumer or intermediate goods. Onodje, (2014) perceived the manufacturing industry as the key variable of an economy that motivates conversion of raw materials into finished goods. Manufacturing sector as seen by Sudiyatno et al., (2017) is a channel for productivity increment in connection with export expansion and imports replacement, foreign exchange earning capacity creation, and employment improvement as well as per - capita income enhancement. Nigerian economy is facing numerous factors which obstruct huge return on resources engaged by manufacturing companies. This emitted from inability to effectively utilize or manage working capital for greater productivity achievement. In any manufacturing company, working capital is regarded as dynamic element that entails rational attention, proper management and planning because of its pivotal role in overall organizational performance and profitability achievement.

According to Charitou et al., (2010) efficient utilization of working capital is tantamount to profitability increment, firm's value enhancement and default risk reduction. This is advocated by Alemu, (2020) who opined that the vital goal of the management working capital is an ongoing concern motive in operations which complement with satisfactory cash flow for long term debts and short term debt obligations as well as the fulfillment of operational expenses. Every manufacturing company desires sufficient resources for operation and production, and ensures resources within their custody are effectively maximized for organizational overall performance and profitability. This shows that any manufacturing company which possesses or realizes organizational overall performance and profitability fulfills its responsibilities to the government in terms of tax payable more than manufacturing companies with lesser profitability. The reason is that working capital, when effectively utilized, determines the volume of profitability which is mounted by the government for tax payable determination for the organisation. Government cogently collected fractional part of the income declared by the manufacturing companies as taxes which are remitted annually (Adegbite, 2020). Nigeria government realizes 30% tax payable from taxable profit declared by the manufacturing companies which is ultimately spent on the public goods provision for the people and the company entirely. Government through taxation oversees the performance of the economy and determines the level of income. The level of the income determined by the government depends on the tax payable remitted by manufacturing companies in the country.

Most of the manufacturing companies blame the inability to fulfill their obligations to the government on working capital inadequacy. This is also advocated by Mazanec, (2022) who brought out that organisation's inability to effectively plan, control and monitor their working capital led to business failures, and profitability reduction which invariably reduced tax payable to the government in the past. According to Mazanec, (2022) these inadequacies are still habitual today among manufacturing companies in the form of increased bad debts and inventory costs which unfavorably affect manufacturing operating performance, and profitability (tax payable determinant). Many manufacturing companies hide under the ineffective working capital as a vacuum to reduce the tax

payable to the government. This dispenses the question “does working capital affect tax payable to the government?” This issue which has been creating divergent opinion calls for empirical investigation in Nigeria. Therefore, the call to study working capital effect on the tax payable to the government by the manufacturing companies in Nigeria is now sacrosanct. Therefore, this study is set out to examine working capital effect on taxation payable in Nigeria manufacturing companies. The extant literature on manufacturing companies’ working capital and tax payable is unobtainable and inaccessible in Nigeria, that is, none of the extant studies examined the interrelationship between taxation and working capital in Nigerian listed manufacturing companies. The area of coverage of this study is extended to tax payable of the manufacturing companies as against the extant literature which limited their study to profitability and performance. Also, this study adds to the existing literature because the methods involved in analyzing the data collected are ultimately different to the existing literature. The scope of coverage (2010 to 2021) also made the study exceptional and remarkable among the extant literature.

## 2. LITERATURE REVIEW

### 2.1. Working Capital

Working capital refers to the capital employed for everyday business operations within a year (Mazanec, 2022). The managing and utilization of working capital is absolutely necessary in order to enhance satisfying profitability, shareholders’ value and company liquidity. The management of working capital built the ability to efficiently and effectively control both the current liabilities and current assets in order to provide firm or organization with massive return on assets, and reduction in the liabilities. Working capital is bifurcated into gross working capital and Net working capital. The former is referred to as the components of current assets such as receivable (debtors), cash (both in hands and banks), and inventories, while the latter is referred to as the difference between the summation of all the components of current assets and all the components of current liabilities. The major components of current liabilities are payable (creditors), and other short-term loans. A good utilization of working capital upholds a company’s profitability, and enhances markets well-being in terms of shareholders wealth, firm value and liquidity (Orumwense & Mwakipsile, 2017). Efficient management of working capital not only adequately provides sufficient capital for the smooth running of the organisation, but also provides enhancement for both the profitability and liquidity for the organisation. Proper working capital management is vital to the organisation because little investment in working capital is tantamount to insufficient quantity of account receivables and materials which invariably emits reduction in production and decrement in sales thereby eventually gives birth to loss of profitability but otherwise production, sales and profitability of the organisation are enhanced.

Working capital Management is embedded with cash, inventories, payables and receivables. It is also regarded as short-term financing requirements of manufacturing firms. However, the needs of working capital in any organization rest on business and industry. Therefore, working capital components, generally, include cash, receivables, inventories, payable, redeemable futures and marketable securities (Orumwense & Mwakipsile, 2017). It is noted that working capital has positive impacts on profitability by some studies (Wanguu & Kipkirui, (2015), Aytac et al., (2020), Cristian & Raisa (2017), and

Orumwense & Mwakipsile, 2017). On the contrary, Jayarathne, (2014), and Lawal et al., (2015) recognised the negative effect of working capital on profitability.

## 2.2. Taxation

Taxation is habitually defined as the imposing of compulsory and mandatory contributions on private companies and individuals by public authorities, having the jurisdiction to defray the income realized from taxation on their governmental activities. Tax income collected is utilized for the good and wellbeing of the populace, and certain services production which are considered efficient by the state. The essence of taxation is to influence the revenue of the state upwardly for the fulfillment of imperative functions. Majority of the researchers in taxation advocated that taxation dispenses good governance, effective economic output, balanced economics, and employment generation (Adegbite (2022); Adegbite & Fasina, (2019); Oboh et al., (2018); Dibia1 & Onwuchekwa, (2017); Chude & Chude, (2015); and Takumah, (2014). It was noted by Adegbite (2022) that since oil income fluctuation in 2015 in Nigeria, government has diverted income source majorly to taxation. This has been yielding positive impact on economy of the country since the economic recession. Taxation, one of the vital fiscal instruments encompasses more than imposition of the compulsory payment by the government but it possesses tax assessment, transfer of resources from the private sector to the public sector, and the effective utilization of the income realized on every sector of the economy (Adegbite, 2019). Through appropriate taxation, government attains imperative macroeconomic objectives such as full employment, sustainable economic growth, external balance, and price stability. Manufacturing companies are one of the sources where taxation is being collected by the government. Nigeria government realizes 30% tax payable from taxable profit declared by the manufacturing companies which it ultimately spends on the public goods provision for the people and the company entirely.

## 2.3. Inventories

Inventories according to Jayarathne, (2014) are the second prevalent asset in any manufacturing firm. They split into raw materials, finished goods and work-in process. Sometimes, inventory leads to numerous costs such as storage cost, obsolescence cost and insurance. Also, if a manufacturing company fails to maintain an appropriate level of investment in inventories, a production disruption and sales decrement can occur. It is seen as inventory availability and conversion. Therefore, inventory conversion refers to a time period taken to convert inventory in stock held in an organisation into sales. In addition, if conversion period of inventory increases, inventory cost increases. Therefore, the essence of inventory management is to reduce costs without initiating production disruption. Inventories have been seen having positive effect on profitability by Wanguu & Kipkirui, (2015), Aytac et al., (2020), Cristian & Raisa (2017), Nastiti et al., (2019), and Rey-Ares et al., (2021) but considered having negative effect on profitability by Jayarathne, (2014), Lawal et al., (2015) and Nguyen et al., (2020). Therefore, it is expected that inventories are germane to the profitability of manufacturing company which invariably has favourable effects on tax payable by Nigeria manufacturing companies to the purse of the government. This is further hypothesized as

**HO<sub>1</sub>: Inventories significantly impact tax payable in Nigeria manufacturing companies**

#### **2.4. Payable**

It has been indicated that delaying in accounts payable payment to suppliers permits organizations to access products quality which is a flexible and inexpensive financing source. Contrarily, delaying of the payment of such payables is expensive if an organization or firm offers a discount for prompt payment. Failure to pay such debts dispenses problems of cash inflow for the organization (Agegneu, 2019). There are many reasons for expecting a significant relationship between accounts payable period and company profitability. The longer the time the company withholds suppliers' resources, the lesser is the value of payable. This indicated that withheld suppliers' resources bring cash inflow and profitability to the organisation due to the fact that cash withholds to settle suppliers are effectively reemployed for production strength which ultimately increases taxable income. Credits owing by the company as results of unavailable resources enhanced company performance in term of satisfaction to customers because of prompt fulfillment of their requests. Because of reliance of organisation on suppliers for sources of funds, payable according to Seyoum et al., (2016) powered the organization in getting rid of financial constraints to financing the organisation. According to Douglas et al., (2018), Agegneu, (2019), Nastiti et al., (2019), Rey - Ares et al., (2021), Nguyen et al., (2020) and Ekwochi et al., (2021), positive significant association existed amid payable and profitability. It was further advocated that companies' profitability increased when organization utilized suppliers' credit efficiently for the running of the organisation (working capital needs). This therefore, prompted the hypothesis stated below

**HO<sub>2</sub>: Payable significantly impacts tax payable in Nigeria manufacturing companies**

#### **2.5. Accounts Receivable**

Credit sales are unavoidable necessity in any organisation both in term of finished goods and raw materials. According to Pouraghajan et al., (2012); and Arshad & Muhammad, (2013), accounts receivables comprise credit granted to customers during the operation with an accounting period in form of trade credit to other companies or consumer credit to the ultimate consumers. Charitou et al., (2010) indicated that the essence of granting credit to customer is to enhance profit by way of increasing sales, fascinate new customers, and maintain old customers. Arshad & Muhammad, (2013) also claimed that receivables ignited when delivering goods or rendering services on credit. Receivables are characterized with the future receipt of monetary resources on the goods and services sold on credit, and the recovery policy of such credits. The recovery policy of the receivable depends on the credit policies effectiveness of the company which is invariably significant to the total performance and profitability of the company. To determine the best credit policy, Ali & Ali, (2012) observed that the financial managers in the organisation must consider major numerous controllable variables which influence receivables in organisation. Such variables include collection effort, credit terms, and credit standards. Credit standards refer to criteria set up by the company to screen and scrutinize applicants to ascertain the reliable customer before offering credit to their customers. This allows the company to exercise a degree of control over the customer on the credit repayment date. The credit granted to customers when repaid at the appropriate time can be reused by the organisation to produce more profitable output but if it is delayed it has negative effect on the company profitability thereby affecting tax payable to the government. Gorondutse et al, (2017); Goncalves et al (2018); Wanguu & Kipkirui, (2015); Aytac et al., (2020); and Cristian & Raisa (2017)

advocated in their studies that accounts receivable possessed positive impacts on profitability which is the determinant of tax payable to the government by the manufacturing companies. On the contrary, Sudiyatno et al., (2017); and Agegnew, (2019) identified negative impacts of the accounts receivable on profitability.

**HO<sub>3</sub>: Receivable significantly impacts tax payable in Nigeria manufacturing companies**

## **2.6. Cash and Cash Equivalent**

Cash is referred to as readily available money within the custody of a company to meet absolutely short-term obligations. Cash equivalent is also referred to as asset that can be quickly and easily converted into cash. It reaches maturity within the shortest period of time than other types of investments. The conversion time range lies between three months or below. Manufacturing company employs cash equivalent to fulfill short-term needs when they arise. Cash and cash equivalents are the utmost liquid components of current assets. Manufacturing company maintains satisfactory cash and cash equivalents to run the day-to-day business operations. While some companies struggle to sustain adequate cash for day-to-day business operations, some companies conserve excess cash with the expectation of unknown overheads. The excess cash in organisation helps the system managing its cash flow effectively and efficiently. Cash in excess rescues a sudden shortage in revenue or deferrals and disappointment in account receivables. In addition, excess or adequate cash in organization confirms that the manufacturing company has strength to fulfill its obligations like payroll, administration expenses, loan payments, and rent, even if the company has challenges in revenue generation for specified periods. According to Sudiyatno et al., (2017), manufacturing companies keep adequate and excess cash at hand as a buffer to fulfill day-to-day responsibilities in case of the urgent customers' request. Furthermore, cash in excess on the balance sheet confirms that manufacturing company is not mandated or forced to secure loan for daily activities which also serves as omen for organisation short-term financial well-being. Therefore, it is hypothetically expected that cash and cash equivalents possess relevant relationship with tax payable. Sudiyatno et al., (2017), Agegnew, (2019), Douglas et al., (2018), Agegnew, (2019), Nastiti et al., (2019), Rey - Ares et al., (2021), Nguyen et al., (2020) advocated that cash and cash equivalents have positive impact on profitability but rejected by Wanguu & Kipkirui, (2015), Muya & Gathogo (2016), Aytac et al., (2020), and Aldubhani et al., (2022) with their views on negative effect of cash and cash equivalents on profitability.

**HO<sub>4</sub>: Cash and cash equivalents significantly impact tax payable in Nigeria manufacturing companies**

## 3. THEORETICAL REVIEW

### **3.1. The Operating Cycle Theory (OCT)**

This theory explicitly and absolutely identified current asset accounts side of working capital as the vital measures of operating activities in manufacturing companies, that is, in terms of distribution, collection and production (Saghir et al., 2011). According to this theory, receivables are unswervingly and absolutely affected by organization's credit collection policy, and cash conversion period of the receivables. It is opined further that granting customers credits increases profitability and saves liquidity's time. This is also

applicable to other current assets components. This theory dispensed that every manufacturing company should put emphasis on the collection periods by setting up effective and vital credit collection policy. Receivables are characterized with the future receipt of monetary resources on the goods and services sold on credit, and the recovery policy of such credits (Mazanec, 2022). The recovery of the receivable depends on the credit policies effectiveness of the company which is invariably significant to the total performance and profitability of the company. But the shortcoming of operating cycle theory is that the theory discards current liabilities as important because the theory fails to recognize current liability as one of the vital elements in an operation of an organisation. The theory forgot that companies also depend on accounts payable as one of the sources of financing of the organization.

### 3.2. The Cash Conversion Cycle (CCC) Theory

Unlike OCT, this theory incorporates and recognizes the two sides of organization working capital. It inculcates current liabilities in working capital so as to augment analysis, and overcome operating cycle theory inadequacies. According to Dong & Su, (2017), who ignited this theory as working capital cycle to discard the assumption of OCT, this theory is superior to other working capital theory that disregards current liability as the vital instrument to organization or disintegrates working capital as acclaimed by operating cycle theory. Therefore, this theory indicates the time variation between actual cash expenditures and actual collection of cash on credits disposal of company products and productive resources. It has been regarded as the time interval between the output cash outlays and collection period. It is calculated by removing account payable period from the summation of account receivable and inventory conversion period. Muya & Gathogo, (2016) advocated that CCC displays both negative and positive indication. The former indication displays the number of days an organization must tie up or borrow capital while expecting payments, but the later displays the number of days an organization must receive cash from sales before paying its suppliers. This theory shows the operational importance of both the current liabilities and current assets in manufacturing companies but failed to exhibit recouping methods of bad debts from the debtors who failed to fulfill their payment promises. However, this study emphasizes on operating cycle theory and cash conversion cycle (CCC) Theory because both components of current assets and current liability are fused into this study. Also, working capital is tantamount to the capital which is readily available, and/or can be convertible easily into cash in order to fulfill financial commitments of the organization when required. Also, favourable working capital in the operation dispenses profit which determines tax payable to the government.

## 4. EMPIRICAL REVIEW

Jayarathne, (2014) identified the effects of optimal working capital management (WCM) on Colombo firm value. The data for the research were extracted from Colombo Stock Exchange between 2008 and 2012. The findings suggested that working capital components of Colombo manufacturing companies had negative effects on profitability with the exception of account payable period. It was further displayed that leverage increment leads to profitability debility. The study was conducted in Colombo which was majorly on profitability but distanced from tax payable.

Another study which was conducted in Nigeria by Lawal et al., (2015) examined WCM effect on profitability in selected manufacturing companies. Panel data was engaged to gauge the data assembled from annual reports of selected six companies through purposive sampling technique in Nigeria, started from 2006 and ended in 2013. The study established a negative but significant relationship between working capital components and profitability. The study further advocated that working capital has significant effects on profitability in Nigeria manufacturing companies. The study was initiated in Nigeria but limited the scope to profitability, not tax payable.

In other to scrutinize the relationship between profitability and WCM, Hoang, (2015) made use of fixed effects, multiple regression, and Pearson's correlation to analyse the data realized from eight listed manufacturing firms in Ho Chi Minh Stock Exchange, started from 2009 and ended in 2014. The results of analytical tools employed found negative but significant relationships amid net trade cycle, cash conversion cycle, average inventory period, average collection period, return on assets and average payment period. The study advocated that firm's profitability could be improved by managers of the organization by reducing net trade cycle, CCC, and other components to optimal level. However, the study was ignited in Ho Chi Minh but not in Nigeria.

Wanguu & Kipkirui, (2015) also examined WCM effect on profitability of Kenya cement manufacturing companies. To fulfill the objective, data were absolutely gathered from three listed cement manufacturing industries from 2000 to 2014, and analyzed with regression analysis and Karl Pearson correlation. The study established that inventory significantly and positively influenced profitability while receivables positively and insignificantly related with profitability. The study further revealed that payable significantly and negatively related with profitability. This study invariably concluded that working capital significantly and positively influenced Kenya profitability. Nevertheless, the study was totally confined to Kenya in which the policy decision cannot be extended to Nigeria.

Muya & Gathogo, (2016) assessed WCM effects on Kenya manufacturing firms' profitability. Descriptive research survey design was adopted by the researchers which involved stratified random sampling method to select sixty-two (62) respondents out of one hundred and fifty-six (156) employees in management and accounts/finances. Data realized through structured questionnaires which were analyzed with descriptive and inferential statistics discovered that cash conversion cycle and average payment period were significantly connected with Kenya manufacturing firms' profitability but cash conversion cycle impacted firm's profitability negatively. However, average payment period and WCM positively and negatively influenced Kenya manufacturing firms' profitability respectively. In the same vein, working capital management effects on financial performance of Kenya listed manufacturing organization was examined by Waema and Nasieku, (2016) from 2005 to 2014. Ten listed firms' data were examined and analyzed using Panel data model. The study unveiled that positive relationship sustained between financial performance and creditor management. The study further unveiled that negative relationship sustained among inventory management, cash management, financial performance and debtor management. According to Waema and Nasieku, (2016), WCM impacted financial performance of Kenya manufacturing firms significantly. However, Kenya manufacturing firms were examined in the study but the policy implication is not useful in Nigeria which absolutely calls for Nigeria manufacturing firms' examination.



Working capital policy's effects on firm value and performance were also investigated by Sudiyatno et al., (2017) on listed manufacturing companies in Indonesia from 2010 to 2013. The data collected from manufacturing companies were analyzed with panel data analysis. Current assets as a ratio to total assets were discovered having positive and significant influence on listed firm performance but current liabilities as a ratio to total assets and leverage were seen having negative but significant influence on listed firm performance. However, the study assessment was from Indonesia, and limited to profitability but the garnered policy cannot be useful to taxation policy in Nigeria.

Orumwense & Mwakipsile (2017) ignited research to determine WCM's effects on managerial performance in manufacturing firms in Edo State, Nigeria. One hundred and thirty-four (134) questionnaires were administered on the staff of selected manufacturing companies in Edo state. The study discovered that WCM was significantly correlated with managerial performance. However, the study was conducted in one State (Edo State) out of 36 State in Nigeria as against the current study which covers the whole 36 States in Nigeria. The relationship amidst listed Malaysian firm's profitability and WCM was investigated from 2007 to 2012 by Ng et al., (2017). The outcome of the data obtained through annual reports of one hundred and twenty-two (122) manufacturing companies, which was analyzed with correlation analysis, showed that gross operating income (GOI) is inversely connected with investment policies but positively connected with profitability. The study was from Malaysian which emphasized absolutely on WCM and profitability but the emphasis was sort of tax payable by manufacturing companies.

Douglas et al., (2018) adopted correlational and cross-sectional research design to evaluate WCM effects on Kenya Small Enterprises' (SMEs) performance. Questionnaire was employed to garner information from Forty (40) SMEs which were selected through random sampling. The results signposted that accounts payable possessed insignificant but positive effect on SMEs profit. Meanwhile, Accounts receivable possessed insignificant but negative effect on SMEs profit. Contrary, with reference to the study, inventory management was seen having significant and negative effect on SMEs profit. The study invariably concluded that working capital management had significant effects on Kenya Small Enterprises' (SMEs) performance. However, the study examined SMEs performance and WCM but tax payable was not examined Agegneu, (2019) sampled five manufacturing companies and thirteen Merchandise companies from 2009 to 2015 through purposive sampling to investigate WCM effect on profitability in Nigeria. The data collected from selected companies were analyzed using Pearson correlation (PC) as well as pooled panel data regression (PPR). The results from both PC and PPR showed that negative, significant, and statistical relationship existed amidst WCM and profitability. The study analyzed data was confined to 2015 as against the current study which extended to 2021.

In the study of Ekwochi et al., (2021) which investigated WCM effect on manufacturing company's productivity, it was discovered, after the data collected from the selected manufacturing companies from 2008 to 2018 in South East States of Nigeria were analyzed with panel regression, that cash payment and collection period showed negative but significant effect on return on assets (ROA). It exposed further that inventory period and current ratio had positive effect on ROA. Agegneu, (2019) concluded in his study that working capital management impacted Nigeria firms' profitability negatively and significantly. However, the study is limited to 2018 as opposed to the current study.

Mazanec, (2022) statistically examined WCM effect on Visegrad group corporate performance which much emphasis on transport companies. The study designed universal models for SMEs in each member state of the Visegrad Group. Linear regression was employed to examine the data collected from transport companies in Visegrad Group. The outcome, after being analyzed with linear regression, showed that WCM has positive significant influence on performance of SMEs sized transport companies in Visegrad Group. However, this study was confined to Visegrad Group transportation companies, which is entirely different to the current study.

The extant literature on manufacturing companies' working capital and tax payable is unobtainable and inaccessible in Nigeria, that is, none of the extant studies examined the interrelationship between taxation and working capital in Nigerian listed manufacturing companies. The area of coverage of this study is extended to tax payable of the manufacturing companies as against the extant literature which limited their study to profitability and performance. Also, this study added to the existing literature because the methods involved in analyzing the data collected are ultimately different to the existing literature. The scope of coverage (2010 to 2021) also made the study exceptional and remarkable among the extant literature.

## 5. METHODOLOGY

Annual published financial statements of ten manufacturing companies were involved to garner the data needed for all the involved variables for the achievement of the motive behind this study. Manufacturing companies were actually selected from listed manufacturing companies in the Nigeria stock exchange jurisdiction. The data sourced were receivable, cash (cash and cash equivalents), inventory (summation of work-in-progress, finished goods and raw materials), payable, profit before tax, and the firm size (net asset of the companies) from published annual financial statements from 2010 to 2022. After the data arrangement, the researchers employed panel data analysis to gauge the effect of working capital on tax payable in Nigerian manufacturing companies. Many tests were also conducted, such as Pearson correlation, panel regression analysis, Feasible Generalized Least Squares (FGLS), and other post estimation tests like autocorrelation and heteroskedasticity test. Hausman test was also launched to gauge the suitable model between random and fixed effect while Breusch – Pagan LM was further launched to select between random and Pooled OLS.

### **Model Specification**

To gauge the impact of working capital on tax payable in Nigeria manufacturing companies, working capital components are the independent variables such as receivable, payable cash, and inventory. These comprise components from current asset and current liability from the statement of financial position of selected manufacturing companies. Tax payable is the dependent variable, while profit before tax and firm size are the control variables. It is econometrically stated as:

$$\text{TAXPAB} = f(\text{INVETRY}, \text{RECEV}, \text{PAYBL}, \text{CASHH}, \text{TOTASST}, \text{SHFUND}, \text{PBT}, u) \quad (1)$$

### Fixed Effect model

$$Y_{it} = \beta_0 + \beta X_{it} + u_{it} \quad (2)$$

$$\text{TAXPAB}_{it} = \beta_0 + \beta_1 \text{INVETRY}_{it} + \beta_2 \text{RECEV}_{it} + \beta_3 \text{PAYBL}_{it} + \beta_4 \text{CASHH}_{it} + \beta_5 \text{TOTASST}_{it} + \beta_6 \text{SHFUND}_{it} + \beta_7 \text{PBT}_{it} + \gamma_2 E_2 + \dots + \gamma_n E_n + u_{it} \quad (3)$$

$$\text{TAXPAB}_{it} = \beta_0 + \beta_1 \text{INVETRY}_{it} + \beta_2 \text{RECEV}_{it} + \beta_3 \text{PAYBL}_{it} + \beta_4 \text{CASHH}_{it} + \beta_5 \text{TOTASST}_{it} + \beta_6 \text{SHFUND}_{it} + \beta_7 \text{PBT}_{it} + \gamma_2 E_2 + \dots + \gamma_n E_n + \delta_2 T_2 + \dots + \delta_t T_{t-1} + u_{it} \quad (4)$$

### Random Effect Model

$$Y_{it} = \beta_0 + \beta X_{it} + u_{it} + \varepsilon_{it} \quad (5)$$

$$\text{TAXPAB}_{it} = \beta_0 + \beta_1 \text{INVETRY}_{it} + \beta_2 \text{RECEV}_{it} + \beta_3 \text{PAYBL}_{it} + \beta_4 \text{CASHH}_{it} + \beta_5 \text{TOTASST}_{it} + \beta_6 \text{SHFUND}_{it} + \beta_7 \text{PBT}_{it} + \gamma_2 E_2 + \dots + \gamma_n E_n + u_{it} + \varepsilon_{it} \quad (6)$$

### FGLS Model

$$\beta \text{FGLS} = (X^T \Omega^{-1} X)^{-1} X^T \Omega^{-1} y \quad (7)$$

Var( $\beta^{\wedge}$ FGLS | X) as

$$(X^T \Omega^{-1} X)^{-1} \quad (8)$$

Where:

|                    |   |
|--------------------|---|
| TAXPAB             | - Tax Payable                           |
| INVETRY            | - Inventory                             |
| RECEV              | - Receivable                            |
| PAYBL              | - Payable                               |
| CASHH              | - Cash and Cash Equivalents             |
| TOTASST            | - Total Assets                          |
| SHFUND             | - Shareholders' Funds                   |
| PBT                | - Profit Before Tax                     |
| En                 | - entity n                              |
| $\gamma_2$         | - Coefficient (Binary Regressor)        |
| $T_t$              | - Time (Binary variable (dummy)),       |
| $\delta_t$         | - Coefficient (Binary time Regressors). |
| $\varepsilon_{it}$ | - within entity error                   |
| $u_{it}$           | - Between entity error                  |

**Table 1** Measurement of Variables

| Variables                 | Measurement  |
|---------------------------|--|
| Tax Payable               | This is the aggregated value of corporate income tax, and education tax paid by the selected Manufacturing companies.  |
| Inventory                 | The aggregated value of closing inventories of raw materials, working in progress and finished goods of all selected manufacturing companies.  |
| Receivable                | The aggregated value of all debts owned by the customers (total debtors) of the selected manufacturing companies.  |
| Payable                   | The monetary value of money owed to the creditors of the selected companies. This is the addition of all the creditors' monetary value of the selected companies extracted from annual published financial statements of selected manufacturing companies. |
| Cash and Cash Equivalents | This is the total value of all the cash at hand and in the bank extracted from annual published financial statements of selected manufacturing companies.  |
| Total Assets              | The aggregated value of noncurrent assets of the selected manufacturing companies extracted from annual published financial statements of selected manufacturing companies.  |
| Shareholders' Funds       | The value of all Equity shares of the companies extracted from annual published financial statements of selected manufacturing companies.  |
| Profit Before Tax         | The total profit realized by the selected companies before tax is deducted. This was extracted from annual published financial statements of selected manufacturing companies.   |

## 6. RESULTS AND DISCUSSION

**Table 2** Descriptive Statistics

| VARIABLE | OBS | MEAN     | STD. DEV. | MIN      | MAX      |
|----------|-----|----------|-----------|----------|----------|
| TAXPAB   | 130 | 1945024  | 3672985   | 1.16E+07 | 1.71E+07 |
| INVETRY  | 130 | 9182413  | 1.09E+07  | 0        | 5.42E+07 |
| RECEVB   | 130 | 9531966  | 1.54E+07  | 67640    | 1.07E+08 |
| PAYBL    | 130 | 1.66E+07 | 2.65E+07  | 136977   | 1.90E+08 |
| CASHH    | 130 | 4.97E+07 | 5.66E+07  | 633423   | 2.76E+08 |
| TOTASST  | 130 | 8.28E+07 | 1.23E+08  | 1839132  | 6.16E+08 |
| SHFUND   | 130 | 4.57E+07 | 7.69E+07  | 302969   | 3.95E+08 |
| PBT      | 130 | 7306788  | 1.18E+07  | 9754273  | 6.36E+07 |

*Source:* Researchers' Compilation (2023)

Table 2 depicted the descriptive statistics /analysis of the variables involved in examining the effect of working capital on tax payable in Nigeria manufacturing companies. It was discovered that minimum tax payable (TAXPAB) by the manufacturing companies selected is 1.16E+07 while the maximum tax payable is 1.71E+07. Inventory (INVETRY) has 0 value as the minimum while 5.42E+07 is the maximum value of aggregated closing inventory of raw materials, work in progress and finished goods. Mean is 9182413, meaning that it took the companies up to 91 days to convert inventories to sales. Also, the minimum value of receivable (RECEVB) is 67640 while the maximum value is 1.07E+08. The Mean of 9531966 displays that it took the sampled companies 95

days to collect receivable from their customers. This is an indication that manufacturing companies create vacuum for credit sales for their customers which invariably shows that the companies have market share potency among their competitors in the country. In the same vein, payable (PAYBL) possessed the minimum value of 136977 and maximum value of 1.90E+08. The mean of payable is 1.66E+07 which displayed that companies also buy goods on credit from their suppliers for sustainability of the companies, and make payment in 166 days. The longer the time the company withholds suppliers' resources, the lesser is the value of payable. This indicated that withholding suppliers' resources brings cash inflow and profitability to the organization due to the fact that cash withholds to settle suppliers are effectively reemployed for production strengths which ultimately increases taxable income. Credits owing by the company as results of unavailable resources enhanced company performance. Furthermore, CASHH minimum value both at hand and in banks is 633423 with maximum value of 2.76E+08. This is an indication that companies possessed financial power to meet the urgent needs of their customers for profit realization which invariably enhances tax payable by the manufacturing companies. The minimum total assets (TOTASST) of the manufacturing companies selected is 1839132 while maximum total assets is 6.16E+08 with the standard deviation and mean value of 1.18E+07 and 8.28E+07 respectively are the indications of financial potency to sustain wind up in case of any financial challenges. More so, shareholders' funds (SHFUND) possessed minimum value of 302969 and maximum value of 3.95E+08. These showed the investment levels of all the shareholders which must be maximized and protected by the organizations. Lastly, the profit before tax (PBT) which is the yardstick of tax payable has minimum value of 9754273 and maximum value of 6.36E+07 with the standard deviation and mean value of 1.18E+07 and 7306788 respectively.

**Table 3** Correlation Analysis

|         | TAXPAB  | INVETRY | RECEVB  | PAYBL   | CASHH   | TOTASST | SHFUND  | PBT    |
|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| TAXPAB  | 1.0000  |         |         |         |         |         |         |        |
| INVETRY | 0.5687* | 1.0000  |         |         |         |         |         |        |
| RECEVB  | 0.5029* | 0.5547* | 1.0000  |         |         |         |         |        |
| PAYBL   | 0.5492* | 0.5947* | 0.4637* | 1.0000  |         |         |         |        |
| CASHH   | 0.5537* | 0.6288* | 0.5690* | 0.8935* | 1.0000  |         |         |        |
| TOTASST | 0.2851* | 0.5186* | 0.3583* | 0.6213* | 0.6122* | 1.0000  |         |        |
| SHFUND  | 0.2741* | 0.6180* | 0.3637* | 0.5483* | 0.6474* | 0.6575* | 1.0000  |        |
| PBT     | 0.5908* | 0.6408* | 0.5520* | 0.6532* | 0.6195* | 0.5576* | 0.6168* | 1.0000 |

*Source:* Researchers' Compilation (2023)

Table 3 explained the absence of multicollinearity of all the variables involved in the study. It was discovered that all variables are devoid of multicollinearity because all the variables coefficient or values are absolutely below 0.8000 which is the benchmark value for multicollinearity. Once there is absence of multicollinearity, the next viable step is to progress to heteroskedacity.

**Table 4** Variance Inflation Factor (VIF)

| Variable | VIF   | 1/VIF    |
|----------|-------|----------|
| TOTASST  | 25.23 | 0.039643 |
| SHFUND   | 20.84 | 0.047995 |
| CASHH    | 14.09 | 0.070987 |
| INVETRY  | 10.64 | 0.093972 |
| PAYBL    | 6.12  | 0.163282 |
| PBT      | 3.09  | 0.323488 |
| RECEVB   | 1.75  | 0.571994 |
| Mean VIF | 11.68 |          |

Source: Researchers' Compilation (2023)

Table 4 publicized that there is heteroskedacity in variables (TOTASST, SHFUND, CASHH and INVETRY) because the VIF values are more than 10. To get rid of the heteroscedasticity, linear regression was incorporated as shown in the column 2 of Table 4.

**Table 5** The Effect of Working Capital on Tax Payable in Nigeria Manufacturing Companies

| TAXPAB                     | <i>Polled<br/>(effects)</i> | <i>Linear</i>       | <i>Fixed-<br/>(effects)</i> | <i>Random<br/>(effects)</i> | <i>Random<br/>(effects)<br/>Robust</i> | <i>FGLS</i>           |
|----------------------------|-----------------------------|---------------------|-----------------------------|-----------------------------|--|-----------------------|
|                            | <i>Regression</i>           | <i>Regression</i>   | <i>Regression</i>           | <i>Regression</i>           | <i>Regression</i>                      | <i>Regression</i>     |
| INVETRY                    | 0.0641<br>(1.29)            | 0.0641<br>(1.12)    | 0.0785<br>(1.29)            | 0.0641<br>(1.29)            | 0.0641<br>(1.54)                       | 0.0485***<br>(4.74)   |
| RECEVB                     | 0.0177<br>(1.24)            | 0.0177<br>(1.37)    | 0.0124<br>(0.74)            | 0.0177<br>(1.24)            | 0.0177***<br>(7.57)                    | 0.0164***<br>(5.97)   |
| PAYBL                      | 0.0147<br>(0.95)            | 0.0147<br>(1.15)    | 0.0210<br>(1.05)            | 0.0147<br>(0.95)            | 0.0147<br>(1.16)                       | 0.0138***<br>(5.51)   |
| CASHH                      | -0.0152<br>(-1.38)          | -0.0152<br>(-1.04)  | -0.0258*<br>(-1.72)         | -0.0152<br>(-1.38)          | -0.0152<br>(-1.25)                     | -0.0101***<br>(-3.02) |
| TOTASST                    | 0.0150**<br>(2.20)          | 0.0150<br>(0.85)    | 0.0126<br>(1.39)            | 0.0150**<br>(2.20)          | 0.0150***<br>(3.84)                    | 0.0119***<br>(4.70)   |
| SHFUND                     | -0.0400***<br>(-4.06)       | -0.0400*<br>(-1.92) | -0.0368***<br>(-3.18)       | -0.0400***<br>(-4.06)       | -0.0400***<br>(-6.41)                  | -0.0362***<br>(-7.46) |
| PBT                        | 0.301***<br>(12)            | 0.301***<br>(7.25)  | 0.291***<br>(8.94)          | 0.301***<br>(12.14)         | 0.301***<br>(45.52)                    | 0.300***<br>(62.86)   |
| CONS                       | 90039.5<br>(0.39)           | 90039.5<br>(0.49)   | 549923.8<br>(1.34)          | 90039.5<br>(0.39)           | 90039.5<br>(0.67)                      | 74007.7***<br>(4.94)  |
| <i>N</i>                   | 130                         | 130                 | 130                         | 130                         | 130                                    | 130                   |
| <i>R</i> <sup>2</sup>      | 0.750                       | 0.750               | 0.568                       |                             |  |                       |
| adj. <i>R</i> <sup>2</sup> | 0.736                       | 0.736               | 0.507                       |                             |  |                       |

*p*-values in parentheses \* *p* < 0.10, \*\* *p* < 0.05, \*\*\* *p* < 0.01

Source: Researchers' Compilation (2023)

To examine the effect of working capital on tax payable in Nigeria manufacturing companies, panel data techniques of analysis were employed. Table 5 shows the different parameters or tools employed through panel data analysis to analyse the effect of working

capital on tax payable in Nigeria manufacturing companies. Pooled regression was initially analyzed but possessed heteroskedacity which was discovered through VIF as shown in Table 4. This prompted the analysis of *Linear Regression* to scrap the heteroskedacity problem in pooled regression. According to Linear regression, INVETRY RECEVB, PAYBL, and TOTASST had positive but insignificant effect on Tax payable (TAXPAB) in Nigeria manufacturing companies ( $\beta = 0.0641; 0.0177; 0.0147$  and  $0.0150$ ,  $t = 1.12; 1.37; 1.15$ ; and  $0.85$  respectively. Random effect and fixed effects regression were also conducted to deeply realize the effects of working capital on tax payable in manufacturing firms. But to clarify the appropriate model for explanation, Hausman test was further tested as shown in Table 6 below. The outcome of Hausman test divulged that random model is absolutely appropriate because of Prob>chi2 value of 0.8558 which is greater than 0.005 benchmark for determination

**Table 6** Hausman Test

|  | - Coefficients ---- |           |            |                         |
|--|---------------------|-----------|------------|-------------------------|
|  | (b)                 | (B)       | (b-B)      | sqrt(diag<br>(V_b-V_B)) |
|  | Fe                  | Re        | Difference | S.E.                    |
| INVETRY  | .0784899            | .0641038  | .0143862   | .0350787                |
| RECEVB   | .0123712            | .017678   | -.0053068  | .0085904                |
| PAYBL  | .0210227            | .0146764  | .0063463   | .0125262                |
| CASHH  | -.0257768           | -.0151897 | -.0105871  | .0102027                |
| TOTASST  | .0126238            | .0149559  | -.0023321  | .0060078                |
| SHFUND   | -.0368165           | -.0400008 | .0031843   | .0060577                |
| PBT  | .2907197            | .3007558  | -.0100361  | .0210406                |
| $chi2(7) = (b-B)'[(V_b-V_B)^{-1}](b-B)$<br>$= 3.30$<br>Prob>chi2 = 0.8558                      |                     |           |            |                         |
| Test: Ho: difference in coefficients not systematic<br>Source: Researchers' Compilation (2023) |                     |           |            |                         |

Moreover, further test was also carried out to determine the vibrant model between pooled and random effect regression. Breusch and Pagan Lagrangian multiplier test was actually tested. The results support random effect regression model for reporting the outcome of the effects of working capital on tax payable. It was shown that Prob > chi2 = 0.034 which is less than 0.05 in favour of random model as shown in Table 7 below.

**Table 7** Breusch and Pagan Lagrangian multiplier test  
 $taxpab[companies,t] = Xb + u[companies] + e[companies,t]$   
 Estimated results:

|   | Var      | sd = sqrt(Var) |
|---|----------|----------------|
| TAXPAB                                  | 1.35e+13 | 3672985        |
| e                                       | 3.69e+12 | 1919842        |
| u                                       | 1.27E+12 | 3563706        |
| Test: Var(u) = 0                        |          |                |
| Prob > chi2 = 0.034                     |          | chi(01) = 6.27 |
| Source: Researchers' Compilation (2023) |          |                |

Random effect (Robust) was also analyzed when it was discovered that there is presence of autocorrelation among the variables. According to Random effect (Robust) results in Table 5, it was discovered that RECEVB, and TOTASST had positive and significant effects on TAXPAB ( $\beta = 0.0177^{***}$ ;  $0.0150^{***}$ ,  $t$  value = 7.57;  $3.84 < 0.005$  significant benchmark) while others have positive and insignificant effects on TAXPAB with the exception of SHFUND which possessed negative significant effect on TAXPAB ( $\beta = -0.0400^{***}$   $t$  value =  $-6.41 < 0.005$ ).

**Table 8** Breusch-Pagan LM test of independence

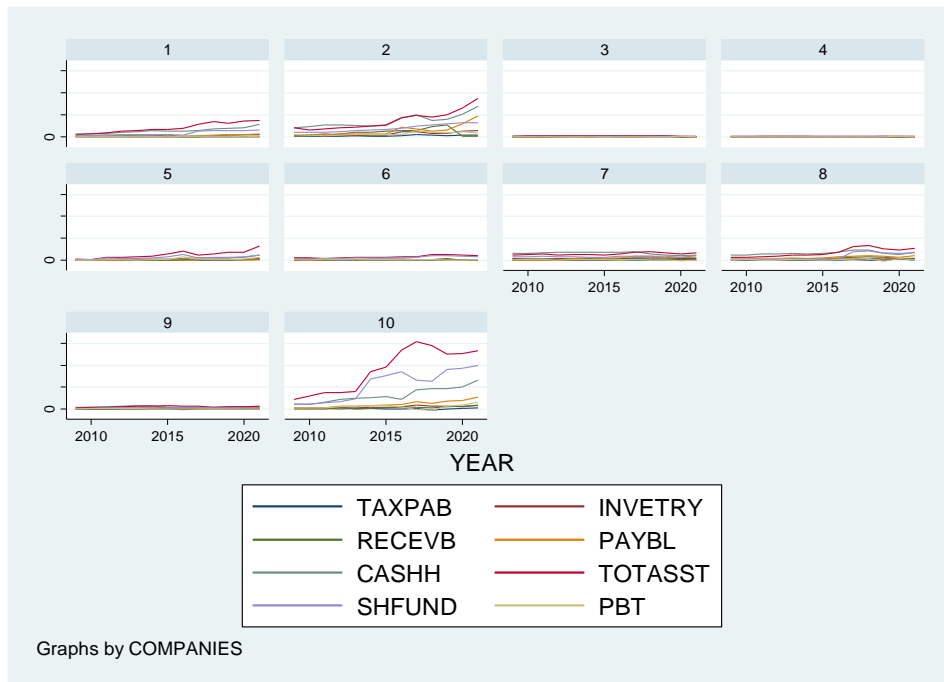
|  | __e1           | __e2               | __e3  | __e4    | __e5    | __e6   | __e7    | __e8   | __e9   | __e10  |
|--|----------------|--------------------|---|---------|---------|--------|---------|--------|--------|--------|
| __e1   | 1.0000         |                    |   |         |         |        |         |        |        |        |
| __e2   | 0.1079         | 1.0000             |   |         |         |        |         |        |        |        |
| __e3   | 0.2100         | -0.7844            | 1.0000  |         |         |        |         |        |        |        |
| __e4   | 0.5499         | -0.2617            | 0.4172  | 1.0000  |         |        |         |        |        |        |
| __e5   | -0.2666        | -0.2630            | 0.2849  | -0.0691 | 1.0000  |        |         |        |        |        |
| __e6   | 0.1243         | -0.0876            | -0.0095   | 0.1266  | 0.1499  | 1.0000 |         |        |        |        |
| __e7   | 0.3450         | 0.1271             | 0.2471  | 0.5001  | 0.3929  | 0.3037 | 1.0000  |        |        |        |
| __e8   | 0.3370         | 0.0941             | 0.0668  | 0.3981  | -0.0374 | 0.7139 | 0.4001  | 1.0000 |        |        |
| __e9   | 0.2409         | 0.7328             | -0.7941   | -0.1904 | -0.4217 | 0.1461 | -0.1935 | 0.2858 | 1.0000 |        |
| __e10  | 0.1765         | -0.0273            | -0.2015   | 0.5079  | -0.3331 | 0.1681 | 0.0000  | 0.3280 | 0.2159 | 1.0000 |
| <b>Chi2(45) =</b>  | <b>69.648,</b> | <b>Pr = 0.0107</b> | <b>Pesaran's test of cross-sectional Dependence (CD) = 2.557, Pr = 0.0106</b> |         |         |        |         |        |        |        |
| <b>Wooldridge test for autocorrelation in panel data</b> |                |                    |   |         |         |        |         |        |        |        |
| H0: no first order autocorrelation                       |                |                    |   |         |         |        |         |        |        |        |
| F (1, 9) = 8.794   |                |                    |   |         |         |        |         |        |        |        |
| Prob > F = 0.0158  |                |                    |   |         |         |        |         |        |        |        |

Source: Researchers' Compilation (2023)

Table 8 divulged the test for cross-sectional dependency among the variables employed. The null hypothesis is that residuals across companies are uncorrelated. But with the test conducted using both Breusch-Pagan LM and Pesaran, it was exposed that cross-sectional dependence existed among the entities with the value of  $Pr = 0.0107$  and  $Pr = 0.0106$  respectively. This dispensed that residuals are correlated across the companies. Wooldridge test for autocorrelation also advocated for the presence of autocorrelation ( $Prob > F = 0.0158$  less than 0.05)

Lastly, FGLS analysis was further employed or tested to absolutely expunge both heteroskedasticity, cross-sectional dependency, and autocorrelation in random effect analysis as shown in Table 8. According to FGLS results in Table 4, INVETRY, RECEVB, and PAYBL are favourably significant to TAXPAB ( $0.0485^{***}$ ;  $0.0164^{***}$ ;  $0.0138^{***}$   $t$  value = 4.74; 5.97; 5.51  $< 0.005$ ) which invariably divulged the significance of working capital components on tax payable in Nigeria manufacturing companies. Other variables involved are favourable significantly to tax payable with the exception of SHFUND and CASHH which are unfavorably significant to tax payable ( $-0.0362^{***}$ ;  $-0.0101^{***}$   $t$  value -6.41; -3.02  $< 0.005$ ).





**Fig 1** The Effects of Working Capital on Tax payable in Nigeria Manufacturing Companies.

## 7. DISCUSSION OF FINDINGS

This study examined the effect of working capital on tax payable in Nigeria manufacturing companies. Ten manufacturing companies were sampled from 2010 to 2022. Manufacturing companies were actually selected from manufacturing companies that are listed within the Nigeria stock exchange jurisdiction. It was discovered from the outcome of Panel FGLS that INVETRY is favourably significant to TAXPAB. This dispensed the meaning that the volume of the inventory held in stock actually determined the tax payable of Nigeria manufacturing companies. That is, the higher the inventory, the higher will be tax payable. The inventory determined the output of the manufacturing company which invariably enhanced the turnover and the profitability of the company, and thereby enhanced tax payable by the companies. This outcome is in consonance with the ideal postulated by Waema and Nasieku, (2016); supported by Wanguu & Kipkirui, (2015), Aytac et al., (2020), Cristian & Raisa (2017), Nastiti et al., (2019), and Rey-Ares et al., (2021) but discarded the submissions of Jayarathne, (2014), Lawal et al., (2015) and Nguyen et al., (2020). RECEVB also has been deducted having positive significant effect on tax payable. The implication is that if the debtor to the company fulfilled their responsibilities in terms of patronage and offsetting of their debt promptly, it would invariably increase the income and profit of the company which has been seen as the parameter for tax payable. The higher the income received from the debtors to the company, the more enhanced is tax payable. The outcome is in tandem with the outcomes of Waema & Nasieku, (2016); Lawal, et al (2015); Gorondutse et al, (2017); Goncalves et al

(2018); Wanguu & Kipkirui, (2015); Aytac et al., (2020); and Cristian & Raisa (2017) but rejected the views of Sudiyatno et al., (2017); Agegnew, (2019).

CASHH showed negative effect on TAXPAB. The implication of the outcome is that cash held or kept in the bank idle without being involved in the production of goods, products and services ultimately reduces the profits for the companies. This further indicates that resources have been tied down without attaching responsibilities, which is disadvantageous to profitability of the company, and hence, invariably affecting tax payable to the government. The excess cash which is not invested in reliable and profitable projects downplays organizations' profitability which invariably reduces tax payable to the government. By keeping idle cash and cash equivalents, companies and government lose an opportunity for additional generation of returns and tax income respectively. This submission complements the submission of Wanguu & Kipkirui, (2015); Waema & Nasieku, (2016); Orumwense & Mwakipsile, (2017); Ekwochi et al., (2021) , Sudiyatno et al., (2017); Agegnew, (2019), Douglas et al., (2018), Agegnew, (2019); Nastiti et al., (2019); Rey - Ares et al., (2021); and Nguyen et al., (2020) but rejected the submission of Wanguu & Kipkirui, (2015); Muya & Gathogo (2016); Aytac et al., (2020); and Aldubhani et al., (2022).

PAYBL has also been deduced having favourable significant influence on TAXPAB in Nigeria manufacturing companies. This divulged that the input collected on credit with aggressive utilization invariably emitted huge profitability which is the pillar for tax payable. Also, delay in offsetting suppliers' debt ultimately, when effectively used in production, enhances profitability and tax payable to the companies and government respectively. Company makes more profits aggressively when combining the debts with the equity share than making use of equity solely in manufacturing company. This is line with affirmations of Agegnew (2019); Douglas et al., (2018), Agegnew, (2019), Nastiti et al., (2019), Rey - Ares et al., (2021), Nguyen et al., (2020); and Ekwochi et al., (2021) but rejected the view of Wanguu & Kipkirui, (2015); and Aytac et al., (2020). These outcomes with the supports of the assumption and affirmations of existing researches suffice enough to deduce that working capital components have positive significant effects on tax payable by manufacturing companies in Nigeria. SHFUND which is the control variable has negative unfavourable effects on tax payable. This shows that returns on the investment of the shareholders at the end of the reporting period deplete the capability of the companies which invariably deplete the profit of the company thereby reducing tax payable. The total assets (TOTASST) and profit before tax (PBT) have positive effects on tax payable. The implication is that an increase in PBT definitely increases the tax payable by manufacturing companies. The higher the profit, the higher is the tax payable by manufacturing companies in Nigeria to the government purses for effective implementation of fiscal responsibilities. This outcome on the positive effects of PBT on Tax payable is in line with the outcome of Ekwochi, Ejim, and Agbaji (2021); Adegbite & Usman, (2017); Sudiyatno, Puspitasari, and Sudarsi (2017); and Wanguu and Kipkirui (2015).

## 8. CONCLUSION

This study examined the effect of working capital on tax payable in Nigeria manufacturing companies. Manufacturing companies were actually selected from manufacturing companies that are listed within the Nigeria stock exchange jurisdiction from 2010 to 2022. The data sourced were: receivable, inventory, payable, profit before tax, and the firm size (the net asset

of the companies) from published annual financial statements from 2010 to 2022. After the data arrangement, we employed panel data analysis to gauge the effect of working capital on tax payable in Nigerian manufacturing companies. Many tests were also conducted, such as Pearson correlation, panel regression analysis, Feasible Generalized Least Squares (FGLS), and other post estimation tests like autocorrelation and heteroskedasticity test. Hausman test was also launched to gauge the suitable model between random and fixed effect while Breusch – Pagan LM was further launched to select between random and Pooled OLS. The outcome shows that receivable, inventory, and payable are favourably significant to TAXPAB which invariably divulged the significance of working capital components on tax payable in Nigeria manufacturing companies. Conclusively, working capital has positive, significant, and statistical influence on tax payable in Nigeria manufacturing companies. The study recommended that more efforts should be expended by manufacturing companies to effectively utilize their working capital in their custody because a good exploitation of working capital enhances company's profitability, and augments the well-being of markets in terms of liquidity, firm value, and shareholders wealth, which invariably increase the tax payable to the government treasury. In addition, effective credit recovery policies should be launched to promptly recover all the non-recoverable debts so that it will plough back into the operation for effectiveness and enhancement of profitability which is the determinant of tax payable to the government.

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## **OBRJNI KAPITAL I POREZ: ANALIZA POVEZANOSTI U PROIZVODNIM KOMPANIJAMA**

*Mnoge proizvodne kompanije za svoju nesposobnost da ispune svoje obaveze prema državi okrivljuju neadekvatnost obrtnog kapitala i neadekvatno planiranje, kontrolu i monitoring koji dovode do poslovnih neuspeha i smanjene profitabilnosti, što je svakako dovodilo do smanjenja plaćenog poreza državi u prošlosti. Stoga ova studija ispituje uticaj obrtnog kapitala na plaćanje poreza u proizvodnim kompanijama u Nigeriji. Odabrano je deset proizvodnih kompanija uvrštenih na Nigerijsku berzu od 2010 do 2022. Podaci koji su dobijeni iz objavljenih godišnjih finansijskih izveštaja od 2010 do 2022. su: potraživanja, zalihe, obaveze, dobit pre oporezivanja, i veličina kompanije (neto imovina kompanije). Nakon prikupljanja podataka, upotrebili smo analizu panel podataka da bismo izmerili efekat obrtnog kapitala na porez u nigerijskim proizvodnim kompanijama. Sproveli smo test jediničnog korena (Panel) da ispitamo stacionarnost varijabli. Pirsonova korelacija, panel regresiona analiza, izvodljivi generalizovani najmanji kvadrati (FGLS) i drugi testovi post-estimacije kao što su autokorelacija, test heteroskedastičnosti i Hausmanov test su takođe pokrenuti da bi se procenila prikladnost modela između nasumičnih i fiksni efekata, dok je Breusch – Pagan LM bio dalje pokrenut da bi se izabralo između nasumičnih i zbirnih OLS-a. Rezultat pokazuje da potraživanja, obaveze i zalihe imaju značajan pozitivni efekat na TAXPAB, što u konačnom pokazuje značajni uticaj komponenata obrtnog kapitala na porez. Zaključno, obrtni kapital značajno, statistički i progresivno utiče na plaćanje poreza u nigerijskim proizvodnim kompanijama. Dalje preporučujemo proizvodnim kompanijama da ulože više truda da efikasno koriste obrtni kapital koji poseduju, zato što dobra eksploatacija obrtnog kapitala povećava profitabilnost kompanije i pojačava tržišnu kompetitivnost, vrednost firme i bogatstvo akcionara.*

*Ključne reči: porez, proizvodne kompanije, obrtni kapital, potraživanja, obaveze, gotovina i gotovinski ekvivalenti, zalihe*