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Tax Incentives and Liquidity Performance of Quoted Industrial Goods' Firms in Nigeria

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Abstract
This study examined the effect of tax incentives on liquidity performance of quoted manufacturing firms in Nigeria Exchange Group. Expo-facto research design was adopted in the study. The population of the study comprised of 18 industrial goods firms listed in Nigeria Exchange Group from 2012 to 2021. The sample size of 10 firms was selected using purposive sampling technique. Data was obtained from secondary sources through the published financial statements of the companies. Data were analyzed through descriptive and inferential statistics. The result from the analysis of data revealed that tax savings had a significant and positive effect on liquidity performance of companies. The findings also from the study revealed that tax holyday has a negative and insignificant effect on companies' liquidity performance. The study concluded that liquidity performance of quoted manufacturing firms improves at the instant of tax savings. It was therefore recommended that Nigerian government should provide adequate tax incentives for manufacturers in Nigeria in order to achieve the growth of infant manufacturing industries.
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1. Introduction

Globally, tax is a compulsory levy placed on citizens as a means to help the government generate revenue for the provision of social amenities (Ajiteru & Bakare, 2018). Although paying taxes is a legal obligation, the impact of these taxes on the financial capabilities of tax-paying businesses is enormous. Hence, organizations all over the world, in order to secure their net earnings, devise means of minimizing tax liabilities by exploiting tax incentives as provided by tax laws (Undie *et al*., 2020). Meanwhile in Nigeria, despite the numerous tax incentives being extended by the government to assist the tax payers, there is still a reoccurrence of stagnated performances across the manufacturing firms, which serve as agents of development and growth, because of some factors and negative effects (Ohaka & Dagogo, 2015). As a result, the primary issue identified is that there is little or no growth in corporate earnings as a result of government tax incentive packages introduced to encourage investment. It can then be deduced from this problem that such incentives have not adequately improved the liquidity position of prospective manufacturing industries. Thus, has the government's effort paid off despite the fact that these various tax incentives drain the government's treasury? This study thus attempts to investigate the significance of tax incentives on the liquidity performance of manufacturing firms.

Notably, the tax incentives being given as motivational influences for various sectors of the economy include: personal allowance, capital allowance, investment allowance, tax savings, loss relief, annual allowance, pioneer relief, and tax holidays (Uwaoma & Ordu, 2016). These incentives are believed to help revive the Nigerian manufacturing sector and accelerate national growth and development. Tax savings and tax holidays are geared towards attracting an in-flow of foreign exchange to complement domestic suppliers for rapid economic development (Obiora, 2018). In view of this, the basis of this research is to know whether these tax incentives have a positive (or otherwise) effect on the liquidity performance of listed manufacturing firms in Nigeria between 2012 and 2021. The choice of this study period provides an opportunity for a comprehensive assessment of the effect of tax incentives on the economy, in which manufacturing firms are considered to have a substantial proportion of total economic activities, though their contribution to the nation's economic objectives is still minimal.

A look at previous literature on tax incentives revealed research conducted on the effect of tax incentives on foreign direct investment (FDI), economic growth, and development in Nigeria (Abdulrahman & Kabir, 2017), which revealed a positive relationship among the variables. Studies also examined the effect of tax incentives in Nigeria on profitability as a measure of financial performance (Adefeso, 2018) which establishes a true impact on companies' return on equity, vis a vis with its significant effect on economic growth in Nigeria (Nnubia & Fabian, 2018). Ngure (2018) also stated that tax incentives are monetary measures that are utilized to draw in

home investments to certain financial regions in a nation. Omesi and Maccarthy (2022) describe a tax incentive as a special arrangement in tax laws to stimulate growth in specific areas, attract, retain, or increase investment in a particular sector, and to assist companies in carrying on identified activities.

However, researchers have only focused on the effects of tax incentives on: the economic development of incorporated firms, the economic growth of SMEs, the sustainability of organizations, profitability, and investment, but they have not focused on determining the effect of tax incentives on one of the fundamental key indices to the survival of the firm, namely, firms' liquidity position. It is with a desire to fill this gap that this study is undertaken. Hence, the government must make sacrifices to evaluate the impact of the incentives offered for economic growth on firm' liquidity. Furtherance, the study investigates the effect of tax savings and tax holidays on the liquidity performance of manufacturing firms in Nigeria. The study seeks to fill the gap in the literature by using secondary data from the annual reports of 10 out of 18 listed manufacturing companies concentrating on the industrial goods sector in Nigeria from 2012 to 2021, based on the fact that these were those in existence during the period of the study.

Objective of the Study

The broad objective of the study is to determine the effect of tax incentives on the liquidity performance of industrial goods firms quoted on Nigeria Exchange Group. The specific objectives are to:

1. examined the effect of tax savings on liquidity performance of quoted industrial goods firms in Nigeria.
2. investigates the effect of tax holiday on liquidity performance of industrial goods firms in Nigeria.

The following hypotheses stated in null forms were formulated in line with the specific objectives:

$H0_1$: Tax savings do not have any significant effect on quick ratio of industrial goods firms quoted on Nigerian Exchange Group.

$H0_2$: Tax holiday do not have any significant effect on quick ratio of quoted industrial goods firms in Nigeria.

2 Literature Review and Hypotheses Development

2.1 Conceptual Review

2.1.1 Tax Incentives

According to Ndajiwo (2018), a tax incentive is defined as any special tax provisions that are granted to qualified investors that afford such investors a favorable deviation from the general tax code. In other words, these incentives grant companies some tax exceptions. Abdulrahman and Kabir (2017) opined that tax incentives are a strong fiscal policy that can stimulate investment and savings, leading to capital formation and thereby enhancing industrial growth and economic development. The policy of tax incentives has the capacity to generate desirable economic gains, depending on how well they are designed. Oroworukwo (2018) stated that tax incentives help to boost a formidable base for optimum revenue generation, and generally, investors will prefer a location with a lower tax liability. In this research study, however, tax incentives are described as exclusions and exemptions from taxes to the government that a business organization receives and is expected to reinvest back into the business to make sound economic decisions. Examples of such incentives include: personal allowance, capital allowance, investment allowance, loss relief, annual allowance, pioneer relief, tax-free dividends, research and development, and tax-free holidays (Philip, 2018).

2.1.1.1 Tax savings

Tax savings refer to the amount by which tax payable is less than the original rate of tax applied to taxable profit. It could be in the form of tax cuts or tax deductions (Ngure, 2018). A *tax* cut is a *reduction* in the rate of *tax* charged by a government. A tax *deduction is a reduction* of income that is taxable. It does not include deferred tax or current tax reductions to be carried over to the next period. It also does not include withholding tax credit notes utilized in current periods. Rather, it includes line items that spell out tax incentives like capital allowances, preferential tax rates, and other definite tax reductions (excluding tax holidays) by tax authorities (Omesi *et al*., 2016). In this study, "tax savings" means the decrease in tax paid or payable to the relevant tax authority (the increase in any refund) attributable to a tax benefit. This class of information is obtained directly from the effective tax rate computation in the notes to the company's financial report.

2.1.1.2 Tax holidays

A tax holiday is a government incentive program that offers businesses a temporary exemption from paying taxes for a specified period of time. The federal government introduces tax holidays to firms, which stimulate foreign investment and business growth. Hence, an attached financial advantage is gained by excluding these firms from the tax base for a certain period of time. According to Effiong and Akpan (2019), all investing firms are relieved of the burden of tax administration costs when a tax holiday is extended by the government. Olaleye and Riro,(2016) opined that this incentive do not require any outlay of public funds as an explanation for their wide spread popularity within developing countries. A tax holiday is granted to eligible industries anywhere in the federation for a period of five years (Ndubuisi & Urhoghide 2018). However, in this research study, a "tax holiday" is defined as income exempt from the computation of tax liability payable to the relevant tax authority. This class of information is directly obtainable from the effective tax rate computation in the notes to the account

of the annual report of companies.

2.1.2 Liquidity Performance

Liquidity is the ability of any organization to meet its short-term financial obligations using its short term financial resources. Thus, efficient liquidity performance of a company entails the planning and control of current assets and current liabilities in such a way that the risk of the company's inability to finance its short-term financial obligations on one hand and excessive investment in these assets on the other is eliminated (Hossin & Begum, 2020).Finally, this determines to a large extent the profitability and ability of firms to meet economic objectives because either insufficient or excessive liquidity can be detrimental to an organization's smooth operations (Olowookere & Uwuigbe, 2018).Hence, manufacturing firms that maintain an adequate liquidity level are able to meet short-term financial obligations as they fall due without affecting profitability or necessary investments that will foster economic growth and national developments. For the purpose of this research, liquidity could be defined as the certainty and speed with which anything can be easily converted into cash. The liquidity position of sampled firms for the period of the study is determined by computing the quick ratio, which is one of the most common liquidity ratios used to determine the proportion of current assets (less inventory) available to cover current liabilities (Waweru 2018).

2.1.2 Tax incentives and Liquidity Performance

According to Kirabo (2018), tax incentives are fiscal policies designed by the government to rehabilitate corporate bodies. These incentives are seen as helpful in improving liquidity performance through encouraging the use of more efficient capital assets. Likewise, Njuguna (2015) opined that tax incentives are widely used by governments around the world to attract private investment in preferred industries. Incentives are often granted to offset actual or perceived differences in the cost of doing business. Thus, Philip (2010) posited that tax incentives act as a catalyst for improved firm performance. As such, tax incentives enhance the quick ratio of a manufacturing firm in the sense that they open doors to reporting enhanced liquidity positions as well as higher profits after tax, which could be easily translated to business expansion for listed manufacturing companies in the Nigeria Exchange Group (Ndemezo, 2018) .Therefore, companies devise means of minimizing tax liabilities by exploiting tax incentives as provided by tax laws (Undie *et al.,* 2020). As a result, a direct relationship is established between the incentives introduced to certain sectors of the economy and an overall increase in liquidity performance. Therefore, the liquidity performance of a company is based on the tax incentives provided by Nigerian tax laws.

Furthermore, companies prefer to pay lower taxes or get some tax savings on tax payable so as to maximize their after-tax profit by minimizing their overall effective tax rate. Kibari and Wahome (2018) maintained that a decrease in tax liability would increase the firm's financial gain appropriately. According to Nwaorgu and Abiahu (2020), a positive impact of tax savings on the financial results of companies as well as funds' availability for investment purposes is established. Thus, tax savings enhance the robustness of the quick ratio of a manufacturing firm because the amount saved through tax savings can be applied to an enlarged short-term investment, which in turn improves the quick ratio of listed manufacturing companies in the Nigeria Exchange Group and stimulates the economic activities of enterprises and investments (Tijani & Ogundeko 2020).

According to Twesige *et al*. (2020), the tax holiday extended to business organizations excludes business investment from certain specified taxes, for a temporary period of time. This in turn serves as a useful fiscal tool to boost the company’s growth, particularly in times of weak economic conditions and lean liquidity performance. According to Undie *et al*. (2017), the tax holiday stated on the pioneer certificate qualifies industries for exemption from the tax net and thereby enhances the companies’ revenue base for those periods. Thus, cash expense for the period is reduced, and this invariably improves the company’s financial position for investments and economic activities. Samo and Murad (2019) maintained that better working capital has a direct relationship with profitability. Therefore, there is a proportional effect of the tax holiday on the liquidity performance of firms.

Concisely, the two concepts that are germane to this study are tax incentives and liquidity performance. These are diagrammatically represented and presented below:

Conceptual Framework

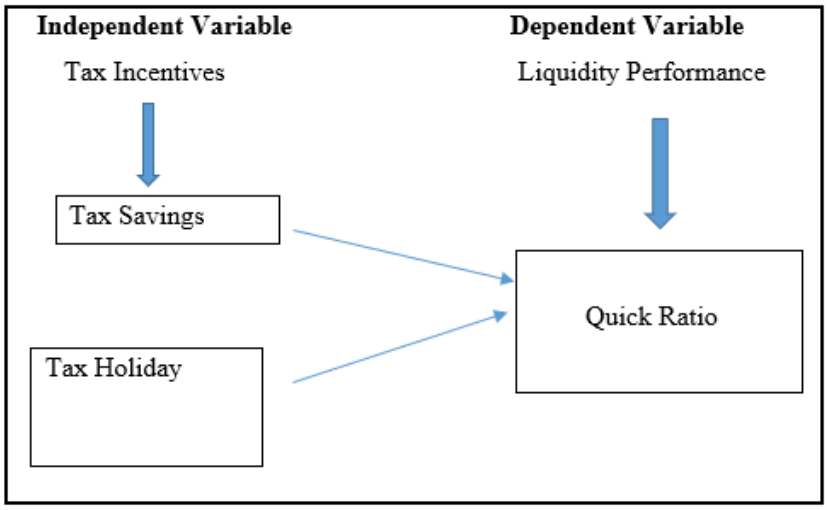

Figure 1: Conceptual Framework to show the interaction between tax savings, tax holidays and liquidity performance.
Source: Authors

2.2 Theoretical Review

This study is based on optimal tax theory. The theory was propounded by Frank Ramsey in 1927. According to the theory, taxation should be designed and implemented in such a way that it maximizes social welfare functions while minimizing distortion and inefficiency while raising set revenues (Mirrlees, 1976). The central assumption of optimal tax theory is that a good tax system should meet the basic conditions of fairness, simplicity, transparency, and administrative ease. It posits that, if a tax payer must choose between two mutually exclusive options, the one with the lower tax or tax break would be chosen by the rational actor. Ramsey concluded that taxes on goods with a more inelastic consumer demand response would have smaller distortions. As a result, governments should enact predictable tax laws and transparent tax administration to provide investors with conducive and favorable market opportunities. Hence, organizations need to employ all legitimate opportunities offered by the tax laws to increase their after-tax earnings and improve their liquidity position.

Several studies have shown the application of optimal tax theory as it relates to the effect of tax incentives on the liquidity performance of organizations. Tax incentives are put in place to encourage the growth of local manufacturing industries, which in turn reduces the burden of tax liabilities on firms (Dynarski & Clayton 2013; Kopczuk & Slemrod 2006; Saez & Stantcheva 2016). This theory is relevant to this study because, while tax incentives reduce the monetary value of tax remitted to the government in the short term, the incentives provided aid in reducing corporate tax burdens and encouraging more investment as a multiplier effect of increased liquidity status. Therefore, firms that are eligible for tax savings and tax holidays pay less tax to post higher net earnings (Ohaka & Agundu, 2012). In addition, tax incentives also make investments more attractive, which in turn enhances the liquidity performance of listed manufacturing companies in the Nigeria Exchange Group.

2.3 Empirical Review

Obafemi *et al*. (2021) carried out a study on the impact of tax incentives on the growth of SMEs in Nigeria. The objectives was to review the role of government tax incentives with special focus on SMEs in Kwara state. Primary data sourced from 260 respondents was used. For the targeted population, the descriptive design method was used with stratified and simple random sampling techniques. Findings revealed a significant correlation between the growth of SMEs and the tax incentives offered. The result of this study further justifies the research survey carried out by Nnubia and Obiora (2018), which examined the effect of tax incentives on economic growth in Nigeria in terms of industrial growth and economic development. Secondary data sourced from the CBN statistical bulletin was utilized, and the data was analyzed using the expo facto research design method and the ordinary least squares method. The findings revealed that the annual allowance has a significant positive effect on economic growth, but the investment allowance has a negative correlation with economic growth.

Likewise, Ondabu *et al*. (2016) conducted research on the effect of tax incentives on the performance of listed firms in Kenya. The study was aimed at determining the relationship between tax incentives and stock market performance. The study adopted a descriptive research design with a population of 61 quoted companies on the Kenya Exchange Group. A sample of 150 respondents were picked through stratified random sampling techniques from 30 listed companies. The study used both secondary data sources and primary data gathered

through a structured questionnaire administered to 150 respondents. The Cronbach (Alpha) model was used to test the reliability of the collected data, and multiple linear regression was used for its analysis. Skewness and kurtosis tests were also conducted on the collected data, and findings from the study revealed that tax incentives have an insignificant effect on stock exchange performance. However, the finding of the study was disproved by Timah & Chukwu (2021), which examined the effect of tax policies on corporate earnings of quoted manufacturing companies in Nigeria. Secondary data sourced from the financial reports of 69 manufacturing firms out of a population of 81 quoted manufacturing companies on the Nigeria Exchange Group was utilized to show that tax incentives significantly influence the corporate earnings of quoted manufacturing companies in Nigeria.

Monday (2019), researched whether tax incentives stimulate SMEs' competitiveness in Nigeria. The study investigated the extent of utilization of various tax incentives on SMEs performances. The study adopted primary data collected through structured questionnaires administered to respondents. OLS and MLR were used for analysis. The results revealed that Nigeria enjoys tax incentives such as the allowance and the initial allowance in free trade zones. This is similar to the findings of Amuka and Ezeudeka (2017), who carried out a research study on tax incentives and the flow of foreign direct investment to the non-oil sector. The study looked into whether the incentive policy had made a significant difference in the pattern of foreign direct investment in the non-oil sector. The study adopted a multiple regression model, and both company income tax and investment allowance appeared with the right sign. The results showed that the tax incentive policy changed the flow of foreign investment into the non-oil sector. .

Uwalomwa *et al*. (2016) examined **t**ax incentives and the growth of manufacturing firms in Nigeria. The objective was to examine the effect of tax incentives on the overall performance of manufacturing industries in Nigeria. Primary data, consisting of 100 structured questionnaires, were administered to the staffs of the selected firms. Regression analysis was used to analyze the data. Findings showed that tax incentives affect the funds available for investments in companies. The results also revealed that those companies were willing to pay their taxes when due. Similarly, Philip (2018) carried out a study on **t**ax incentives and the growth of Nigeria's manufacturing sector. The objective was to determine the overall effect of tax incentives on the performance of the players in the manufacturing sectors in Nigeria. Secondary data was employed, while OLS regression techniques were used for analysis. Findings revealed that the null hypothesis was rejected to confirm that tax incentives have a direct and significant relationship with the corporate performance of manufacturing firms.

Sun *et al*. (2020) conducted a study on whether the VAT incentives of the new energy industry increase the firm's profitability in China. A difference-in-differences approach was used to describe and analyze the data. The study revealed that VAT incentives are insufficient to increase corporate ROE. A similar study was conducted by Undie *et al.* (2020) on the impact of tax planning and tax incentives on the profitability of companies in the free trade zones. The study surveyed the impact of planning for tax incentives as applicable in free trade zones. The study employed the expo facto research method with the use of a simple random technique, whereby a multiple linear regression model was utilized to draw a relationship between tax incentives and profitability. Findings, however, revealed that tax incentives have improved corporate performances and thereby increased investment in the zones.

Olaniyi and Okerekeoti (2022) carried out a study titled "Firm's Liquidity and Tax Aggressiveness of Deposit Money Banks in Nigeria." The study employed an ex-post facto research design. The sample size consists of the 13 deposit money banks quoted on the Nigerian Exchange Group (NGX). Secondary data were used for the study, as extracted from the annual reports and financial statements of the selected banks for a nine-year period from 2012 to 2020. The panel data were analyzed using descriptive statistics and OLS regression analysis. The findings revealed that liquidity and firm size have insignificant negative impacts on tax aggressiveness. However, Andersen and Tveiten (2017) conducted a study on the effect of corporate tax avoidance on investments and its relationship to firm liquidity and established that higher liquidity firms tend to invest more and companies classified as "good liquidity firms" seem to have a greater investment sensitivity to changes in the effective tax rate.

Kyari (2020) studied the impact of petroleum tax incentives on investment inflow in Nigeria. Data was collected via a five point Likert questionnaire and analyzed using descriptive statistics and the Kruskal-Wallis technique. The study revealed that Nigeria's petroleum tax incentive package is sufficient and appropriate for attracting foreign direct investment. This further buttressed a similar study conducted by Olaleye *et al. (2016),* who investigated the effect of reduced company income tax incentives on foreign direct investment in quoted manufacturing firms in Nigeria. The study adopted a descriptive research design with a targeted population of 74 listed manufacturing companies. A sample size of 352 respondents from 32 manufacturing companies was selected using stratified purposive sampling. The survey research design was based on primary data, and the findings revealed a positive linear relationship between reduced CIT incentives and FDI.

Aribaba *et al.* (2019) surveyed the effect of tax policy on the survival of entrepreneurial businesses in Undo State**.** The study employed a survey research design with a population of 18 local governments. Multistage

sampling techniques were utilized to select the sample size. The analysis was done using logistic regression**.** Findings showed a negative significant effect between multiple taxation and sustainability tax rates. In addition, Boly *et al*. (2019) conducted a study to assess the effect of tax policy on FDI and its spillover effects. A dynamic spatial Durbin model was used with panel data from 19 African countries. Secondary data of IMF bulletin was used to gather facts. The findings revealed a strategic complementarity of FDI inflows between the sampled countries, demonstrating that an increase in FDI inflows in a host country stimulates FDI inflows in its neighbors.

Research on the influence of incentives and non-incentive taxes on profit management was conducted by Mujennah *et al*. (2021) in Indonesia to determine how incentive taxes and non-incentive taxes affect profit management. A quantitative research approach was used with secondary data obtained from the official gazette. Multilinear regression analysis with SPSS 25.0 was used as the test tool. Findings revealed that current tax expenses had an influence on profit management compensation. Similarly, a study was conducted by Ilina and Ushakova (2015) in Russia on the effectiveness of tax incentives for business R &D. The regression method was used for its analysis, and secondary data was analyzed based on statistical analysis. The study reflected that not all cases of indirect tax incentives lead to an increase in the share of R&D in the cost structure of enterprises.

Onyango (2015) evaluated the effect of tax incentives on the financial performance of five-star hotels in Nairobi County. The study adopted a quantitative descriptive design. A multiple regression model was utilized. The findings revealed a strong positive relationship between W&T and the financial performance of five-star hotels in Nairobi County. However, this was disproved by the study conducted by Palić *et al*. (2017) on the long run impact of personal income taxation on the economic development of Croatia. The study aimed to analyze the long-term impact of personal income taxation on economic conditions in Croatia. Secondary data was obtained from the Croatian Ministry of Finance's 2016 State Budget. Logarithmic data were used in the cointegration analysis. Findings show that personal income taxation in Croatia has a significant negative impact on economic growth in the long run.

However, critical evaluation of the above-mentioned previous works carried out by different authors in different countries revealed that many works have been done on the effect of tax incentives on foreign direct investment (FDI), economic growth and development, profitability, company sustainability, and investment, but research was not focused on determining the effect of tax incentives on one of the fundamental key indices to the survival of the firm, that is, firms' liquidity performance. With the gap identified, this study employed firm-specific secondary data on tax incentives and liquidity performance.

3. Methodology

The study employed ex-post facto research design to achieve the stated objectives. Data was obtained from secondary sources of published annual reports of companies under consideration. The population comprised of all manufacturing firms listed on the Nigerian Exchange Group within the period of 2012 to 2021.The choice of the base year 2012 was due to National Manufacturing Policy and CBN fiscal incentive Policy set up to be between 2012-2013. A sample of ten (10) listed industrial goods firms were purposively selected due to the fact that these are those in existence during the period of the study. Data analysis technique was done using Descriptive statistics and multiple regressions.

3.1 Model Specification

The model specification below was developed in line with the study conducted by Ngure (2018) on tax incentives and performance of selected manufacturing firms in Kenya. The study utilized Corporate Income Tax incentives, Excise Tax incentives and Capital allowance incentive as variables to be measured stating the model as:

$NPit = \alpha + \beta 1CITIit + \beta 2CAIit + \beta 3ETIit + \beta 4CDIit + \varepsilon it$

However, in line with changes in business world, this study re-measured the variables with the inclusion of Tax Savings and Tax Holiday and the model can then be expressed as follows:

$QRit = \beta_0 + \beta_1 TSit + \beta_2 THit + \mu it$ ……. eqn (1)

Where:

QRit = Quick Ratio (ratio of current asset less inventory to current liability)
TSit = Tax Savings
THit = Tax Holidays
Subscript i= Firms
Subscript t = Years ranging from 2012 to 2021
β_1, β_2 = Unknown Coefficient of Estimates
μ it = Error term
β_0 = Parameter to be estimated
A-priori expectation = $\beta_1 > 0$; $\beta_2 > 0$

Table 1. Summary of variables, measurement and sources

Variables	Description	Measurement	Source
Quick Ratio	**Quick Ratio** shows how much current assets(less inventory) can finance current liabilities as they fall due.	Calculated as : Current asset less inventory / Current liability. Computed from Statement of financial position	Oluwole *et al* (2020)
Tax Savings	**Tax savings** means the decrease in tax paid to the tax authority attributable to a tax benefit	Computed from data to be obtained directly from company annual accounts.	Twesiege(2019)
Tax Holidays	**Tax holidays** Means government incentive programme that offers a tax elimination to businesses for temporary period of time.	Computed from data to be obtained directly from company annual accounts.	Twesiege & Gasheja (2020)

Source: Author's Compilation (2022)

4. Data Analysis and Discussion of Findings

4.1. Descriptive Statistics

The descriptive statistics reported in table 2 shows that quick ratio (QR) which is a measure of liquidity performance across the industrial goods firms on the average is negative having the value of -.0951123. It is an evident fact that the industry is highly capital intensive and the need to be liquid is essential for the purpose of meeting necessary obligations. The standard deviation value shows .661436 which result to 66 percent variation in the liquidity performance of the companies and this imply high variability of the liquidity performance in the industry. The firm with minimum value have the value of -1.184895 and maximum value of .9700416. Data for the variable is negatively skewed (-.0666006) and has *mesokurtic* distribution with a kurtosis value less higher than 3 having the value of 2.004. The average value of tax savings (TS) is 1.676 with standard deviation of 2.03 indicating that among the industrial goods firms, they have been enjoying tax savings but the rate of the incentive is variably high from one firms to the other as the coefficient of variation shows the value of over 100 percent. There are firms with no tax savings incentive as the minimum value is 0 and maximum value of 4.94 percent decrease. The data for the variable is positively skewed showing .603 and normally distributed with kurtosis value of 1.615518. Furthermore from table 2, tax holiday has an average value of 3.27 with a standard deviation of 3.668, indicating there is high variability in the period of time during which the company is allowed to pay no tax. The minimum value is 0 and the maximum of 9.49. The data for the variable is positively skewed showing .6803 and normally distributed with kurtosis value of 1.906188

Table 2: Descriptive Statistics

Variables	QR	TS	TH
Observations	90	90	90
Mean	-.0951123	1.676551	3.271686
Std. Deviation	.661436	2.037297	3.668515
Coeff. Variation	-6.954267	1.215171	1.121292
Minimum	-1.184895	0	0
Maximum	.9700416	4.941642	9.499946
Skeweness	-.0666006	.60388	.6803006
Kurtosis	2.004625	1.615518	1.906188

Source : Author's Computation (2022)

4.2. Test of Variables

4.2.1. Normality Test

The normality of residuals was conducted using the Shapiro-Wilks test of normality and the result is presented in table 3a. The Shapiro-Wilk test being a statistical test determines whether the data distribution as a whole differs from a comparable normal distribution. Hence, the table shows that sample mean distribution across independent samples is normally distributed .From table 3b, the results indicates that residuals of the variables explaining tax incentives and liquidity performance have p-values that are below 0.05 on the table at 5% level of significance.

Table 3a: Shapiro-Wilk W Test for Data Normality

Variables	Obs	W	V	z	Prob>z
QR	90	0.99148	0.645	-0.969	0.83361
TS	90	0.94976	3.800	2.944	0.00162
TH	90	0.92355	5.783	3.871	0.00005
residuals	90	0.89920	7.625	4.480	0.00000

Source: Author's Computation (2022)

Table 3b: Skewness/Kurtosis tests for Normality

				----------joint ------	
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
QR	90	0.7826	0.0006	10.17	0.0062
TH	90	0.0090	0.0000	19.26	0.0001
TS	90	0.0187	0.0000	55.05	0.0000
residual	90	0.0004	0.0739	13.03	0.0015

Source: Author's Computation (2022)

4.2.2. Linearity Test

Table 4 shows that the relationship between quick ratio (QR) and tax savings (TS) is positive and weak, with a coefficient of 0.0642, implying that if the tax savings of the industrial goods firm increase, their liquidity will increase by just 6.42 percent and the relationship is not significant at 5 percent having probability value of 0.5474. The relationship between quick ratio (QR) and tax holiday (TH) is negative, having a coefficient of -0.2906, which implies that more of tax holidays granted to the companies will reduce their liquidity by 29.06 percent and the relationship is not significant at 5 percent showing P-value of 0.0055.Likewise from table 4, the relationship between tax savings (TS) and tax holiday (TH) is positive, showing a value of 0.4787, indicating that a one-time improvement in tax holiday will improve the tax savings by 47.87 percent and the relationship is significant at 5 percent having probability value of 0.0000. The relationship between the explanatory variables does not show the existence of multicollinearity as it is not above the expected threshold of 0.7.

Table 4: Correlation Analysis of Study Variables

	Quick Ratio	Tax Savings	Tax Holidays
Observations	90	90	90
Quick Ratio	1.0000		
Tax Savings	0.0642	1.0000	
	(0.5474)		
Tax Holidays	-0.2906*	0.4787*	1.0000
	(0.0055)	(0.0000)	

Source: Author's Computation (2022)

4.2.3. Panel Unit Root Test of the Variables

Unit root test results displayed in table 5 shows that all the variables are integrated to order zero, that is, 1(0).

Table 5. Panel Unit Root Test

Variable	**Levin, Lin & Chu t***		**Harris-Tzavalis**	
	test-statistics	p-value	Z-statistics	p-value
Quick Ratio	-4.9000	0.0000	-3.9496	0.0000
Tax Savings	-2.7534	0.0029	-5.6661	0.0000
Tax Holiday	-1.8619	0.0313	-2.6865	0.0036

Source: Author's computation (2022)

4.2.4. Multicollinearity Test of the Variables

The outcome of the multicollinearity test using the variance inflation factors, having examined the degree of correlation among the independent variables, is reported in table 6, and the result is not found to be significant as the tolerance values are comparatively beyond the established rule of thumb. The evidence presented concludes that there is no multicollinearity problem; the VIF values of variables are less than 10, and the tolerance values are greater than 0.10 (rule of thumb). Therefore, the study can rely on regression co-efficient to predict the level of impact of independent variables on dependent variables and the outcome of the findings can be considered valid.

Heteroscedasticity test was conducted using Breusch-Pagan / Cook-Weisberg test and the result shows probability value of 0.1568 which indicate the absence of heteroscedasticity problem. Data for the study was also tested for auto-correlation using Wooldridge test for autocorrelation in panel data, the result the probability of 0.0288 which is significant indicating that there is problem of Auto-correlation.

Table 6a: Post Estimation Test Results

Tolerance and VIF Value		
Null Hypothesis	**VIF**	**1/VIF**
There is no multicollinearity among the variables (1/VIF >0.10)		1.31
Breusch-Pagan / Cook-Weisberg test for Heteroscedasticity		
Null Hypothesis	**Statistics**	**Probability**
Constant variance across the variables residuals (P>0.05)	2.01	0.1568
Wooldridge test for autocorrelation		
Null Hypothesis	**Statistics**	**Probability**
No first-order autocorrelation (P>0.05)	7.079	0.0288
Hausman Specification Test		
Null Hypothesis	**Statistics**	**Probability**
Coefficient in difference is not systematic	6.00	.0030

Author's Computation (2022)

Table 6b: Tolerance and VIF Value

Variable	**VIF**	**1/VIF**
Tax Holiday	1.30	0.770811
Tax savings	1.30	0.770811

Source: Author's computations (2022)

4.3. Tax Incentives and Liquidity Performance

The regressed result shows the effect of tax incentive such as tax savings (TS) and tax holidays (TH) on the liquidity performance as specified in the model after meeting the basis for a Best Linear Un-bias Estimate (BLUE) as shown in table 7. It was indicated that there is problem of serial correlation and these were corrected through panels corrected standard errors (PCSEs) regression.

The Hausman specification test conducted produced a p-value of .0030, which was significant at 5%. This implies that the variation in unique features across entities is assumed to be fixed. However, the fixed effect model was not interpreted due to the failure in some post estimation test, so the panels corrected standard errors (PCSEs) regression was interpreted and the basis of judgment used is the t-statistics and probability value. The R-Squared test indicate 0.1381 and this imply that the explanatory variable has 13.8 percent influence on the dependent variable and the remaining percent is captured by the error term implying that there are many other forms of tax incentive that could improve the liquidity performance of the companies under investigation.

The gap in the explanatory power may also be due to the fact that firms in the industrial goods are not under special consideration by the tax authority for incentives unlike the other firms in the agricultural sectors that are into primary food production and other innovative firms that is meant to contribute to the government sustainable goals. The Wald chi2 affirms that the explanatory variables are significant and the null hypothesis that the coefficients are not simultaneously equal to zero is rejected as the result shows 14.42 at 2 degrees of freedom. Since the probability value of the model is 0.0007 and is less than the 0.05 criterion, it implies that the model is statistically significant at percent.

The overall result shows that tax incentives significantly affect the liquidity performance of the Nigerian industrial goods firms. The regression result for the individual explanatory variables revealed that tax savings (TS) has z-stat of 2.37 and a probability value of 0.018. This indicates that tax savings have positive effect on liquidity performance of industrial good firms. Also, the effect of tax holiday on the liquidity performance is negative and significant having z-statistics of -3.74 and probability value of 0.000. There are many implication for this results and one of it is that the observed significant positive effect of tax savings on the liquidity performance of the industrial good firms may indicate that the lesser their burden in tax liability the higher their liquidity. The findings align with the results of Kyari *et al*. (2020, Ngure (2018) and Olaleye *et al*. (2016) who found a positive and significant effect of tax incentives on manufacturing firms in Nigeria. Furthermore this equally implies that once there is considerable reduction in the tax paid by these firms, they will have enough cash to meet their daily operation needs and finance their assets without selling off the inventory or externally sourcing for funds.

Also, the observed negative effect of tax holiday on the quick ratio of companies imply that temporary exemption of a firm from certain specified taxes, typically the corporate income tax can only reduce their obligations for a while but does not translate to liquidity. This may be so because one of the essence of tax holiday is to allow the firm gain more to invest in the economy hence, the companies may take advantage of the period to make capital investment which will in turn have effect on their liquidity. This results align with the findings of Onyago(2015) who asserted a negative and insignificant effect of tax incentives on financial performance of Kenya five- star hotel. On a similar study carried out by Nwaoma and Ordu (2016), it was stated that tax incentive helps a company increase its project but cannot create profit for any company.

Moreover, it was observed that tax savings shows a positive and significant effect on the liquidity performance of those companies under review, hence this implies a direct relationship between tax savings and the quick ratio which thus means that when a tax is saved, there is an inferred robust liquidity for the organization to undertake its developmental goals and objectives. In line with this, Philip (2010) and Ndemezo, (2018) posited that tax incentives acts as a catalyst for improved firms' performance. However, the negative and insignificant effect of tax holiday on the liquidity performance of the industrial firms revealed that there is an inverse relationship between tax holiday and firm's liquidity performance. This confirms the findings of Tirimba *et al* (2016) who also revealed that there is no significant effect of tax incentives on performance of firms listed at Nairobi securities exchange. Inaddition Njeru and Ndimitu (2015) also found out that the influence of tax incentives on investments were insignificant. Hence, industrial goods firms should utilize the financial gain as a result of temporary exemption from tax net for profitable activities which yields eventual improved liquidity.

Table 7: Panels Corrected Standard Errors Regression Results

Quick Ratio	Coef.	Std. Err.	Z	P>z
Tax Savings	.0856644	.0361876	2.37	0.018
Tax Holiday	-.0751756	.0200966	-3.74	0.000
_cons	.0072181	.0912556	0.08	0.937
Number of Obs	= 90			
R-squared	= 0.1381			
Wald chi2(2)	= 14.42			
Prob > F	= 0.0007			

Source: Author's Computation (2022)

4.4. Discussion of Findings

Considering the insignificant and negative effect of tax holiday on the quick ratio from the results of this study, industrial good firms should ensure to invest the amount gained as a result of non- payment of tax judiciously so as to realize the government sustainable and developmental goal. Tax incentives gives room for firms to lay claims to certain financial cut that could be diversified to enhanced productivity which could yield better financial performance in terms of profitability and liquidity .Hence, companies should ensure maximum utilization of these incentives to improve liquidity position.

Though tax savings enjoyed by the firms boost the liquidity performance of the companies, yet more could still be done in terms of cost recovery and improved cash flow. Firms could take advantage of tax savings which would reduce cash outflow and liquidation of current assets that would have occurred with settlement of tax liabilities.

5. Conclusion and Recommendations

The study examined tax incentives and liquidity performance of quoted manufacturing firms in Nigeria Exchange Group using tax savings and tax holiday on quick ratio. Specifically, the result shows that tax savings had a positive but weak effect while a negative and insignificant effect is manifested by tax holiday on the liquidity performance of quoted industrial good firms in Nigeria. The study therefore concluded that tax incentives has ability to influence the liquidity performance of quoted manufacturing firms in Nigeria Exchange Group. The study therefore recommends as follows:

1. Government should review present tax incentives such as increased years for tax savings and more years for tax holidays so as to reflect the prevailing economic conditions.
2. Tax savings should be granted to more industrial goods firms quoted on Nigerian Exchange Group to improve profitability in the industry.
3. Tax holidays should be more extended to eligible industrial good firms quoted on Nigeria Exchange Group

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