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**FIRM CHARACTERISTICS AND SUSTAINABLE GROWTH OF LISTED INDUSTRIAL
GOODS FIRMS IN NIGERIA**

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Abstract

This paper analyses the effect of firm characteristics on sustainable growth of listed industrial goods firms in Nigeria from 2011 to 2020, leaning on the Ex Post Facto research design. The study utilizes time series secondary data using panel least square regression technique. The annual data utilized for the study were tested for multicollinearity as well as test for heteroscedasticity with Stata econometric package. Findings from the study show that dividend policy has a positive insignificant effect on sustainable growth and working capital has a positive significant effect on sustainable growth of the industrial goods firms under study. The study concludes that only the variable of working capital appears to significantly influence sustainable growth rate of industrial goods firms in Nigeria. The paper recommended that management of these industry goods companies should advocate for policies that will enhance swift conversion of inventory to cash to improve firm growth. This could range from the provision of cash discount to customer to encourage purchases.

Keywords: Firm characteristics, Sustainable growth, Dividend policy and Working capital

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Introduction

In financial management literature, sustainable growth rate (SGR) is the rationally achievable growth rate that a company could maintain without running into problems and determining the factors that affect the firm's SGR would help stakeholders in making the right decisions. The determinant factors of SGR include: the asset turnover ratio, where a higher asset turnover ratio (greater asset efficiency) leads to a higher SGR; Dividend policy, where a lower dividend payout ratio increases the retention rates which leads to growth in capital and SGR; the profitability ratio, where higher profit margin ratio directly impacts on SGR of a company; A higher leverage ratio (assets to equity) also means a higher sustainable growth rate. If a firm decides to grow at a rate above its sustainable rate, the firm may have higher debt (the firm borrows to increase its assets to equity ratio) more retain earnings (the firm lowers its dividend payout ratio), a higher profit margin (the firm cut costs), or fewer assets (the firm makes more efficient use of its assets. The opposite is the case if a firm decides to grow at a rate below its sustainable grow rate. The sustainable growth rate (SGR) is a measure that firms uses for different purposes, such as to evaluate the credit worthiness of companies. If the company's

growth in sales is greater than the sustainable growth rate (SGR), the company will rely on financial institutions to advance loans to them to meet up with the capital needs or the financial institutions can assist the company in the issue of shares in order to provide the capital needed. If the reverse is the case, where the company's growth in sales is lower than the sustainable growth rate (SGR), the company has the option of investing the cash surpluses through the financial institution in money and capital market instruments for short term and long term cash surpluses respectively.

A review of several empirical studies from continents over the world showed different results of the determinants of sustainable growth. Furthermore, the review also revealed the following research gap. Most past studies were done in Asia especially in India (Surahbi Somya, & Madhuri Saripalle, 2021; and Aggarwal, 2016), Malaysia (Rahim, Nor, Ramli, & Marzuki, 2021; Nor, Ramli, Marzuki, & Rahim, 2020), Indonesia (Sunard, Pertiwi, & Supramono 2021; Listiani & Supramono, 2020), Jordan (Al-Slehat & Altameemi, 2021) and Pakistan (Mubeen & Hanif, 2017) while in Africa the few studies were in Ethiopia (Solomon, Tadele, Shiferaw & Daniel, 2016), Kenya (Nanjala, Lucy, & Eddie, 2020; and Mukherjee & Sen, 2019) Egypt (Hassan & Hart, 2016) and Nigeria (Alayemi & Akintoye, 2015).

Studies have been conducted across the globe but there is a limited research on the subjected matter in developing economy like Nigeria especially in the manufacturing sector. Also previous studies ignored the working capital which is one of the key determinate of sustainable firm growth (SGR). Therefore, this study will address the above research problems by including working capital as determinant of SGR and also we proxy firm growth by sustainable growth rate which to the best knowledge of the researcher have been hugely ignored in prior Nigeria studies. Lastly this research used a 10 year period from 2011 to 2020 unlike previous studies mentioned above which concentrated on shorter periods and also use data of manufacturing firms were used which is scanty in literature in relation to this topic. In light of the above research problems, this study seeks to examine the determinant of firm sustainable growth rate in Nigeria. Specifically, the study will;

1. Determine the effect of dividend payout policy on sustainable growth rate of listed industrial goods firms in Nigeria
2. Evaluate the effect of working capital on sustainable growth rate of listed industrial goods firms in Nigeria

Literature Review

Sustainable Growth Rate

The framework for the sustainable growth rate (SGR) was propounded by Higgins (1977), and he identifies four main factors that have influence on SGR; they are the capital structure, dividend policy (under financial constraints), profitability, and asset efficiency (Working Capital). Amouzesh, Moeinfar and Mousavi (2011) find that a firm's SGR depends only on its earnings' retention rate (R) and return on equity ($SGR = R \times ROE$). Capital structure, profitability (profit margin), asset efficiency and the retention ratio are associated with the SGR and it reflects a combination of operating and financial elements. Then, the combination of operating a company (profit margin and asset efficiency) and financial elements (retention ratio and capital structure) into a single measure becomes a very valuable measure of financial performance for each company. The SGR must be evaluated with specific measures of a company's performance. This measurement can be described by determining the factors that affect a firm's SGR to help stakeholders make the right decisions. According to Radasanu (2015) and Hartono and Utami (2016), SGR is influenced by four factors: the asset turnover ratio, where a higher asset turnover ratio (greater asset efficiency) leads to a higher SGR; Dividend policy, where a lower dividend payout ratio increases the retention rates which leads to growth in capital and SGR; the profitability ratio, where higher profit margin ratio directly impacts on SGR of a company; A higher leverage ratio (assets to equity) also means a higher sustainable growth rate

Sustainable growth refers to the growth in revenues the firm can achieve given its financial and operating constraints. The SGR helps explain why a proper balance must be maintained between firm growth and profitability and it is also a useful tool for a banker to determine a company's creditworthiness (Fonseka, Ramos & Tian, 2012). SGR models also shows how operating and financial performance measures (i.e profit margin, asset turnover, dividend payout, and leverage) are interconnected (Clark, Chiang, & Olson, 1989; Varadarajan, 1983). Hence, the concept of SGR can be useful to all forms of business entities.

SGR will be same with the actual growth of the company when there is no external equity financing, and when the operating and financial performance ratios are constant. Otherwise, the SGR will change periodically, since in practice the operating and financial ratios are not constant Olson and Pagano (2005). Consequently, deviations between SGR and actual growth can be explained by changes in operating and financial performance ratios.

Higher actual growth to SGR can be traced to an increase in profit margin, reduction dividend payouts, increase in asset turnover, increase in financial leverage, and inflow of new external equity financing. Another value of SGR is that it integrates a firm's growth objectives with its internal and external resource constraints resulting in an internally consistent strategic plan. For that reason, firm can only grow faster than its SGR if there are no resource constraints.

Determinants of Firm Growth

Dividend Payout Policy

The extent of dividend paid out by an organization is primarily influenced by an organization's dividend policy, which are rules and procedures a business uses to select which proportion of its earnings it will give back to its stakeholders. As viewed by Pandey (2017) dividend is part of the company's net earnings distributed to shareholders as return on their claim in the company usually based on recommendations by the board of directors. According to Muigai, & Muriithi (2017) as well as Baker, Powell and Veit (2014) dividend is an appropriation of profits distributable to shareholders after making appropriate deduction of tax and fixed interest obligation related to debt capital. Dividend policy decisions have also been identified as one of the primary elements of corporate finance policy (Uwuigbe, Jafaru, & Ajayi, 2012)

As explained by Kosikoh (2014) dividend policy refers to guideline, regulation and policies that a company makes use of, in deciding how to embark on dividend payment. Amidu (2017) posited that dividend payout is the ratio of total cash dividend distributed to the available net income for the shareholders whereas, the Dividend yield, can be described as a profitability indicator shown as a cash dividend per share for common stocks divided by the per share market value. It can also be simply determined as dividend per share divided by the market value per share.

Ouma and Murekefu (2012) define the term dividend as payment by a company to its stockholders. Emekekwe (2018) further defines dividend as that section of a business's profit that is shared out to the investors as reward for investment. Dividend may therefore be viewed as the section of a firms' net income that the directors propose to distribute amongst investors in proportion to their shareholdings in the firm (Pandy, 2017). Fumey and Doku (2013) describes dividend payout as a proportion of total profit paid to ordinary shareholders as dividends. Dividend payout ratio is considered vital in providing insight on a company's dividend policy to its stakeholders.

Dividend policy as a determinant factor of SGR implies that a company dividend policy should be tailored towards low payout ratio and higher retention rate as this increases the growth of capital and implicitly the SGR.

Working Capital

Working capital management comprises the management of company's current assets and current liabilities. An efficient working capital management ensures an optimal level of working capital at all times (Kumari & Anthuvan, 2017). Mohanty, 2013 in his study posit that working capital is the

flow of available funds necessary for the working of a business. It consists of funds invested in current assets, which in the ordinary course of business can be turned into cash within a short period without diminishing in value and without disruption of the organization. It is an important element in any organizational setting that requires serious attention, proper planning, and management (Owolabi & Alu, 2012). Working capital management policy involves the management of inventory, trade receivables, trade payables cash, and short-term investments to minimize the possibility of illiquidity and inefficiency, Korede (2017). These policies should also take into consideration the nature of business as different businesses have different working capital requirements. The efficient utilization of the firm's working capital has a linear relationship with the profitability of that firm. Working capital management is the process of planning for the acquisition and usage of short-term assets (Ismail, Mohammed & Mohammed, 2015).

Working capital influences SGR in the sense that an increase in asset turnover ratio which is a proxy for working capital causes an increase in sales generated per asset unit, which reduces the need for additional assets for an increase in sales and which results in an increase in the SGR

Empirical studies

Qiao, Shen, Zhang, and Chen (2021) study the influence of factor market distortions and innovation efficiencies on sustainable profit growth. In the study, Cobb–Douglas (C-D) production function and stochastic frontier analysis (SFA) were used to calculate the factor market distortions and innovation efficiencies respectively, and then the generalized method of moments (sys-GMM) was employed to analyze the panel micro data of China's renewable energy industry from 2010 to 2019. Their findings revealed that factor market distortions can significantly reduce sustainable profit growth. Specifically, capital market distortions reduce profit sustainable growth more than labor market distortions, low, and high innovation efficiency had a negative and positive significant relationship with profit sustainable growth, respectively.

Al-Nasser and Al-Jubouri (2020) studied the relationship between the rate of sustainable growth and internal growth rate and the improvement of the performance of the company and the degree of relationship between these variables in the Iraqi Stock Exchange for 22 companies for the period 2010-2017, using analytical statistical methods and methods such as the Mann-Whitney U and Spearman correlation tests and using the SPSS statistical program. V22. Linear regression analysis was used to examine the correlation between the deviation of the actual growth rate from the sustainable growth rate, return on assets (ROA), price to book value (P / B), community ratios and rapid rate. The study revealed that there is a correlation between ROA and IGR and SGR and is not significant with the general rate of return, the results also showed a relationship between most operational efficiency indicators, IGR and SGR.

Wang, Wang, and Dai (2019) examined whether internal control indeed plays a role in firm's sustainable growth, particularly conditional on different institutional environments of the listed firms in China, they find that effective internal control positively contributes to firm's sustainable growth, and the effect is manifested in well-developed institutional environments. The authors noted that these results are robust to a battery of sensitivity tests, including control for Endogeneity, and alternative proxies for sustainable growth, internal control, and institutional environment.

Rahim, Nor, Ramli, Marzuki (2019) examines the influence that the determinants of sustainable growth rate has on share price performance among 181 Shariah and 142 non Shariah compliant companies in Malaysia over the period of 2007 to 2016. Additionally, this study aims to investigate the significance of the sustainable growth rate as mediator in the relationship between determinants of sustainable growth rate and share price performance. For the purpose of data analysis and hypotheses testing, this research performed Structural Equation Model (SEM) using STATA software. Based on the results, only Shariah compliant sample meets the requirement in SEM where the sustainable growth rate is a significant relationship with share price performance. This result

indicated that higher NPM will increase SGR and SPP. For TDTE, DPR, STA, and TA are considered as an “indirect-only mediator variable. The results demonstrate that better or worse sustainable growth rate, and rather determinants of sustainable growth rate, is lead for share price performance when they make their company’s planning in order to have better business prosperity.

Fiala and Hedija (2017) sought to know if firm size is a determinant of firm growth in Slovakia. The study focuses on the examination of the relationship between firm size and firm growth for the companies in Slovakia during years 2009 – 2016. The data are taken from Amadeus database. They focused on the sample of profit industries – sectors A-N according to CZ-NACE classification. The validity of Gibrat’s law was tested with the help of the linear regression model with the first-order autoregressive process. The study found that firm growth is dependent on firm size; large companies grow more slowly than smaller ones.

Insalaca (2017) analyzed the impact of growth strategies on the long-term performance and investigate specific F&B firms’ growth strategies. They reach this aim by using a database comprising of 28 large, listed F&B Western companies in the period 2007-2015. They further use EBITA Ratio as accounting measure for performance, and they execute a literature study to dive into the specific F&B industry characteristics that influence growth strategies’ choice. The result of the panel regression analysis show strong evidence that internal growth has a positive differential impact on performance, no significant correlation between external growth and performance, while acquisition experience has a small but significant effect.

Aggarwal (2016), in his study of empirical evidence of measuring growth determinants of Indian Firms revealed through his Multiple regression analysis that company’s size, age, profitability, advertising intensity and research and development intensity, solvency, leverage, efficiency, diversification, and nature of industry are statistically significant in determining the growth of Indian firms.

Teng, Aslam, Onder and Ludo (2012) examined the determinants of firm growth of Belgian companies. The purpose of this study is to examine which financial determinants could explain firm growth in the Belgian context. Therefore, the study performed an ordinary least squares (OLS) regression for the full sample. The study results showed that innovation, which is measured by the intangible assets ratio, has a positive impact on firm growth. In conclusion startup companies are advised to invest in innovation and gradually use external debt financing to generate more growth.

Amouzesh, Moeinfar, and Mousavi (2011) examined the relationship between sustainable growth rate and liquidity and firm performance for a sample of 54 firms listed in the Iran financial market during 2006-2009. They use a linear regression analysis to examine the association between the deviation of actual growth rate from sustainable growth rate and Return on Assets (ROA), Price to Book value (P/B), Current and Acid ratios. The study likewise revealed that the deviation of actual growth rate from sustainable growth rate is having relationship with ROA and P/B ratios and no significant association in the deviation of actual growth rate from sustainable growth rate and Current and Acid ratios.

Methodology

This study employed *Ex Post Facto* and non-experimental research design. The study is longitudinal covering a period of ten (10) years. That is, from 2011 to 2020 employing industrial goods firms listed on the floor of the Nigerian Exchange Group. The population of the study consists of all 14 industrial goods firms listed on the floor of the Nigerian Exchange Group (NGX). The sampling technique employed is purposive since firms were included in the sample on certain selection criteria. These criteria were based on the firms are listed on the Nigerian Exchange Group market for 2011-2020. The final sample size consists of 12 industrial goods firms were arrived at based on the availability of data for ten years for all the research variables.

In this study, data were sourced from the Nigerian Exchange Group Fact books and related companies’ annual financial reports for the periods. The data for the sampled industrial goods firms

were sourced from Nigerian Exchange Group Fact Books and related companies’ annual financial reports and footnotes for the periods covered in the study. However, the computed sustainable growth, the determining variables of dividend payout, and working capital data would be sourced from each listed firm’s annual audited financial reports as compiled by IdRatios Nigeria.

Model Specification

We specify our model to capture the determinants of firm sustainable and internal growth rate. Thus, the study adapted the model specified by Wijaya and Atahau (2021) which was modified for the purpose of establishing the relationship between the dependent variables and the linear combinations of several determining variables captured in the study. Succinctly, the econometric form of our model is expressed as:

$$SUSG_{it} = \beta_0 + \beta_1 RETA_{it} + \beta_2 DETA_{it} + \beta_3 DIVP_{it} + \beta_4 CACC_{it} + \mu_{it}$$

Where:

- SUSG = Sustainable Growth
- DIVP = Dividend Payout
- CACC = Cash Conversion Cycle (proxy for working capital)
- β_0 = Constant
- β_1 - β_2 = Slope Coefficient
- μ = Stochastic disturbance
- i = ith firm
- t = time period

Thus, our apriori expectations are stated as; $X_1-X_2 >> < 0$: which means that a rise in the determinant variables of dividend payout policy and working capital were led to a rise or fall in firm growth rate of listed industrial goods firms in Nigeria.

Operationalization of the Variables

S/N	Variables	Notation and Sources	Apriori Sign
Dependent Variable			
1	Sustainability Growth Rate	We measure sustainable growth rate in percentage as return on equity multiply by retention ratio (1-dividend payout ratio)	
Independent Variables			
4	Dividend Payment	Cash dividend payout in percentage is computed as cash dividend paid divided by profit after taxes	
5	Working Capital	Cash conversion cycle in days is computed as inventory Days + Trade receivable Days - Trade Payable Days	

Source: *Author’s Compilation (2023)*

Data Analysis Technique

Specifically, the econometric techniques adopted in this study are the panel fixed and Random effect regression techniques. Panel data regression provides better results since it uses large observation and reduces the problem of degree of freedom. In evaluating the panel regression results, the Hausman specification test will be used to select between fixed effect and random

effect. The individual statistical significance test (T-test) and overall statistical significance test (F-test) will also be used. Importantly, the goodness of fit of the model was ascertained using the coefficient of determination (R²). The panel analysis will be done after descriptive statistics, normality test, correlation analysis, variance inflation test (test for multicollinearity) and Test for Heteroscedasticity. All analyses were conducted at 5% level of significance using STATA 16 software.

Analysis of Results

Descriptive Analysis

In this section, we examine the descriptive statistics for both the explanatory and dependent variables of interest. Each variable is examined based on the mean, standard deviation, maximum and minimum. Table 1 below displays the descriptive statistics for the study.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
susg	88	46.81091	132.1358	-531.37	511.32
dipr	89	25.40708	29.9901	0	116.54
cacc	90	4.12e+08	3.91e+09	-1340.793	3.71e+10

Source: Author's computation (2023)

The mean of sustainable growth (SUSG) for the sample industrial goods firms was 46.81 while its standard deviation value was 132.14. The maximum value of sustainable growth was 511.32 while the minimum was -531.37. The mean of dividend payout policy (DIPR) was 25.41 with a standard deviation of 29.99. Dividend payout policy was 0 and 116.54 on the minimum and maximum respectively. For the variable of working capital as measured by cash conversion cycle (CACC), the table shows that it has a mean of 4.12 with a standard deviation of 3.91. The maximum and minimum value of cash conversion cycle was -1340.79 and 3.71 respectively.

Normality Test

One of the assumptions of ordinary least squares regression is that the data is normally distributed. In other words, the observations follow a normal (Gaussian) distribution. Therefore, it is assumed that the population from which the samples are collected is normally distributed. However, the null hypothesis is that "the sample distribution is normal." If the test is valid (significant), the distribution is non-normal. We follow the results of Mendes and Pala (2003), and they concluded that the Shapiro-Wilk test is the most powerful normality test. Therefore, we conducted a residual normality test, as shown in the table below.

Table 2: Normality Test

Variable	Obs	W	V	z	Prob>z
susg	88	0.72981	20.061	6.606	0.00000
dipr	89	0.87672	9.239	4.901	0.00000
cacc	90	0.08141	69.482	9.354	0.00000

Source: Author's computation (2023)

From the table above, we find that the dependent variables of sustainable growth (prob>z = 0.00000) is not normally distributed since the probability of the z-statistics as reveal by the

Shapiro-Wilk test is significant at 1% significant level. The same can be said of the independent variables of dividend payout policy (prob>z = 0.00000) and working capital (prob>z = 0.00000). However, proceed with the ordinary least square regression but carefully interpreting the probability statistics against the t-statistics in line with the recommendation of Guajarati, (2004).

Data Analyses

In this section we conduct the correlation and the regression analyses. The results is presented in the tables that follows

Correlation Analysis

In examining the association among the variables, we employed the Pearson correlation coefficient (correlation matrix) and the results are presented in the table below.

Table 3: Correlation analysis

	susg	dipr	cacc
-----+			
susg	1.0000		
dipr	0.1538	1.0000	
cacc	-0.0240	0.3093	1.0000

Author’s computation (2023)

In the case of the correlation between firm specific attributes and sustainable growth, the above results show dividend payout (0.1538) has a positive association with sustainable growth. However working capital structure (-0.0240) has a negative association on sustainable growth. However, to test our hypotheses a regression results will be needed since correlation test does not capture cause-effect relationship.

Regression Analyses

However, to examine the cause-effect relationships between the dependent variables and independent variables as well as to test the formulated hypotheses, we used a panel regression analysis since the data had both time series (2011 to 2020) and cross-sectional properties (9 listed industrial goods firms). The panel data regression and an OLS pooled results obtained is presented and discussed below.

Table 4: Regression Result

Note: (1) bracket {} are p-values

(2) **, ***, implies statistical significance at 5% and 1% levels respectively

Author’s computation (2023)

	SUSG Model (Pool OLS)	SUSG Model (Fixed Effect)	SUSG Model (Random Effect)	SUSG Model (LSDV Regression)
C	32.97 {0.317}	67.57 {0.128}	32.97 {0.314}	28.49 {0.567}
DIPR	0.43 {0.357}	0.33 {0.548}	0.43 {0.355}	0.33 {0.548}
CACC	1.11 {0.004} **	1.51 {0.001} **	1.11 {0.003}	1.51 {0.001} **
F/Wald Stat.	4.56 (0.01) **	4.53 (0.01) **	18.23 (0.01) **	2.66 (0.01) **
R- Squared	0.18	0.20	0.16	0.30
VIF Test	1.19			

Heter. Test	29.19 ***	(0.00)
Hausman Test		13.16 (0.043)

The table above represents the regression results obtained from the panel data and an OLS pooled estimate of this study. From the table, we observed from the OLS pooled regression results of that the R-squared value of 0.18 shows that about 18 of the systematic variations in sustainable growth of the pooled industrial goods firms over the period of interest was jointly explained by the independent variables in the model. The F-statistic value of the OLS regression of 4.56 and the associated P-value of 0.01 shows that the OLS regression on the overall is statistically significant at 5% level. This means that the regression model is valid and can be used for statistical inference. However, to further validate the fitness of the OLS model, the study proceed to check for inconsistencies with the basic assumptions of the least square regression. These regression diagnostics tests include test for multicollinearity and test for heteroscedasticity as well as test for fixed and random effects.

Regression Diagnostic Test

In this study, we first conduct a panel least square regression analysis as seen in the table above then proceed to check for inconsistencies with the basic assumptions of the least square regression.

Multicollinearity

Correlation is a problem when the independent variables are not independent. If the degree of correlation between variables is extremely high (perfect correlation), it can cause problems when you fit the model. Hence, multicollinearity occurs when the explanatory variables in a regression model are perfectly correlated suggesting a strong relationship between the independent's variables. In this study like in most other related studies, we employ variance inflation factor (VIF) technique to diagnose the presence or absence of multicollinearity. A cut-off means VIF value of 10 is given for regarding a VIF as high. This is consistent with the recommendation of Gujarati (2004) which allows the mean VIF to be less than 10. The table above shows a mean VIF value of 1.19 which is less than the benchmark value of 10 indicating the absence of multicollinearity in the specified model.

Homoscedasticity

The assumption of homoscedasticity states that if the errors are heteroscedastic then it will be difficult to trust the standard errors of the least square estimates. Hence, the confidence intervals will be either too narrow or too wide. We conduct this test by employing the Breusch Pagan module in Stata 14. The result obtained from the OLS models as shown in the table above reveals the probability value as P-value: 0.0000. These results indicate that the assumption of homoscedasticity has been violated due to very low P-values which is statistically significant at 1% level. The presence of heteroscedasticity in models clearly shows that our sampled industrial goods firms are not homogeneous. This therefore means that a robust or panel regression approach will be needed to capture the impact of each bank's heteroscedasticity on the results. In this study, the panel regression method of both fixed and random effect is adopted.

Test of Hypotheses

Hypotheses One: *Dividend policy has no significant effect on sustainable growth rate of listed industrial goods firms in Nigeria*

The results obtained from the Least square dummy variable regression reveals that dividend policy {0.33 (0.548)} as an independent variable to sustainable growth appears to have a positive insignificant effect on sustainable growth of the industrial goods firms under study. This therefore means we should accept the null hypothesis and reject the alternate hypothesis. Hence, dividend policy has no significant effect on sustainable growth rate of listed industrial goods firms in Nigeria the period under study.

Hypotheses Two: *Working capital has no significant effect on sustainable growth rate of listed industrial goods firms in Nigeria*

The results obtained from the Least square dummy variable regression reveals that working capital {1.51 (0.001)} as an independent variable to sustainable growth appears to have a positive significant effect on sustainable growth of the industrial goods firms under study. This therefore means we should reject the null hypothesis and accept the alternate hypothesis. Hence, working capital has a significant effect on sustainable growth rate of listed industrial goods firms in Nigeria the period under study.

Discussion of Findings, Conclusion and Recommendation

This study provides evidence on firm specific determinants of sustainable growth rate of industrial goods firms in Nigeria. Since, the study is an extension of existing studies, only few findings in literature are not in agreement with the current positions of this study. In terms of working capital, the findings from our study is consistent with most of the previous studies who found a positive relationship between the two measures, based on firms from developed economies; the US (Lyngstadaas 2020), the UK (Goncalves et al. 2018), Finland (Enqvist et al. 2014), or from developing economies; Uganda (Kabuye et al. 2019), Egypt (Moussa 2018), Vietnam (Nguyen and Nguyen 2018), Ghana (Amponsah-Kwatiah and Asiamah 2020). Specifically, maximization of the business profitability is an effect of working capital management, but also the reverse causality is plausible when firms are profitable, they have more cash to invest in working capital.

Evidence from our empirical analysis showed that dividend policy has no significant effect on sustainable growth. DeAngelo et al. (2004) confirm that the dividends of industrial firms are highly concentrated, and that dividend concentration had increased over the previous two decades. Thus, as few as 25 firms paying the largest dividends account for most of the aggregate dividends and earnings of industrial firms, which suggests a two-tier structure in which a very limited number of firms with very high earnings collectively generate the majority of earnings and dominate the dividend supply, while the vast majority of firms have at best a modest collective impact on aggregate earnings and dividends. The outcome is that the aggregate dividends paid by industrial firms over these decades have increased even as the number of dividend-paying firms had decreased. The tendency appears to be that of low-dividend-payout firms ceasing to pay dividends altogether. DeAngelo et al. (2008) find that the payouts for large firms have been increasing rapidly leading up to the GFC with dividends increasingly concentrated in firms that also repurchased their shares. They consider that the high degree of dividend payments in large, mature firms is explained by the ability of dividends to address the agency problems of free cash flow (as opposed to the signalling explanation). Nevertheless, for firms initiating dividend payments, signalling is the likely explanation (Lang and Litzenberger, 1989; Kale et al., 2012).

This study provides evidence on firm specific determinants of sustainable growth rate of industrial goods firms in Nigeria. Since, the study is an extension of existing studies, only few findings in literature are not in agreement with the current positions of this study. Specifically, we conclude that only the variable of working capital appears to significantly influence sustainable growth rate of listed industrial goods firms in Nigeria. However, our study shows that profitability, capital structure and dividend policy have no significant effect on sustainable growth rate.

Recommendation

Based on the findings of this study, we carefully recommend that management of these industry goods companies should also advocate for policies that will enhance swift conversion of inventory to cash to improve firm growth. This could range from the provision of cash discount to customer to encourage purchase.

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