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WORKING CAPITAL PRACTICES OF QUOTED NON-FINANCIAL FIRMS AND PERFORMANCE OF NIGERIAN ECONOMY

Tajudeen Odetayo[1] and Kazeem Makinde[2]

[1]Faculty of Financial Studies, Department of Accountancy, Osun State, Polytechnic, Iree. [2]Federal University of Agriculture, Abeokuta

ABSTRACT

A firm need to have a balance between liquidity and profitability while performing its daily operations as asserted by Iqbal and Wang, (2015), this daily operations on the short-run, should have somewhat relation with the economy in which its been operated. It is on this background that we beamed the search light on examining the extent to which non-financial firms' working capital practices contributes to the Nigerian economy using a panel data of nine (9) years (2012-2020). We made use of secondary data comprising the financial reports of the firms collected from NSE Fact Book, CBN, 2020 and thereafter analysed with 3 regression models, viz, POLs, RE and FE. The results revealed that 16.83% of the changes in Nigerian economy in terms of RGDP was caused by the working capital practices of the firms with F-statistics *p-value* >0.05. This is considered to be too low for an economy to maintain a sustainable performance. We therefore concluded that the working capital practices of quoted non-financial firms in Nigeria contributes an insignificant 29% to the Nigerian economy in terms of the Real Gross Domestics Product.

Keywords: Real Gross Domestic Product, Working Capital, Performance, Economy, Nigeria.

INTRODUCTION

The main purpose of working capital management is to sustain the optimal level of liquidity and turnover ratios and to managing the firm utilize it to generate revenues. The silent goals of working capital managements are profitability and liquidity. Firm performance is obtained and achieved with firm's effective and efficient management of its working capital such that risk of inability to meet short term obligations is eradicated and unwarranted investments in working capital are avoided. Therefore, there should be a trade-off balance between liquidity and profitability of the firm working capital management which is concerned with efficient and effective planning and controlling of short-term financing and investment decision (Ajayi etal, 2017). Managers increase a firm value by setting the capital ratio to its optional level and maximization of shareholder's wealth is achieved by carefully controlling short term obligations as well as reducing investment in liquid assets. Thus, financial management of a business hinges on the management of its short-term operations that drive the long term goals.

It is noteworthy to observe however, that large number of firm failures in the past was linked to the inability of the business managers to effectively plan and control the working capital components of the firms (Ali, 2019). These observed inadequacies among the financial mangers seem to be in practice these days in firms in Nigeria in the form of high profile of bad debt; as a result of not managing the accounts receivable properly, high inventory cost as a result of bad inventory management policy and illiquidity due to their inability to understand the cash conversion cycle. These inadequacies in the management and neglect of working capital cycle lead the firms to having longer number of days that the accounts receivable are outstanding, the number of days the inventory are held in warehouse, and shorter number of days it takes the firms to settle account payable.

In Nigeria however, WCM is very important as most providers of credit prefer the short-term credit market to the long-term market. This attitude may be traced to the relatively high inflation rates in Nigeria compared to other developed or developing countries which have tendency or reducing the purchasing power of future cash flows. Given the above circumstances coupled with the fact that other sources of financing the firm scarce, it has become

imperative therefore for firms in Nigeria to efficiently manage their working capital to become profitable. In addition, the importance of efficient working capital management by non-financial firms in Nigeria cannot be over emphasized as this is extremely needed to boost profitability and increase expansion, which are pre-requisites in solving the country's employment issues and ensuring economic stability.

However, it is worthy of note that there has been a growing number of studies that examined the relationship between working capital and profitability in the recent time as well as the various methods or approaches to solving the mirage of problems facing the subject of phenomenon, the authors include Zanxim et al, (2020); Ajayi et al, (2017); Raji et al, (2017); Yakubu et al, (2017); Faith & Ela (2016) cited in Daniya (2018); Kamaul and Ayuo, (2014) and Jinadu (2010).

Justification for these common efforts centered around Return on Assets (RoA) and Return on Equity (RoE), Cross sectional, Time series, Random effect model, Working Capital Policies, Correlation and Panel Regression analysis as well as Hierarchical Linear Mixed Estimator (HLME). Also, most of these studies were however, centered on large firms operating within well-developed money and capital market of developed economies and did not consider the fact that the amount of working capital required varies across industries and indeed firms depending on the nature of business, scale of operation, production cycle, credit policy, and availability of raw materials.
It is regrettable to note that in spite of these huge literature in this area, many firms had crashed, most especially manufacturing sector of the Nigeria economy in which application of working capital is pronounced (Jinadu, 2009). In addition, some promising investment with high rate of return are facing and being frustrated out of business because of inadequacy of working capital. Many factories had been either temporarily or completely short down because they could not meet their financial obligations as at when due because they were not liquid. Many Nigeria workers had been forcefully thrown into unemployment markets and frustration because they depend on relations as a result of the aborted mission of their organization caused by poor attention given to the management of working capital, unfortunately Nigerian capital and money markets are not really helping to ameliorate this problem, instead more often than not; they compounded the problem by creating bottleneck with harsh condition that could not be easily met by the companies that are at the range of collapse.
Economic performance of Nigeria is measured in terms of growth in the real Gross Domestic Product (GDP). Thus, real GDP is the deflated market value of all final goods and services produced within the national borders of a country for a given time frame (Uwakaeme, 2015). It is however observed that the present economic growth rates of 2.21% in 2019, compared with 1.92% in 2018 does not translate into physical growth in Nigeria.

Invariably, most previous studies related to our study considered not more than one (1) sector of the non-financial firms of the economy, however, we considered all the non-financial firms across all the quoted sectors of economy on the Nigeria Stock Exchange (NSE) with most recent published annual reports, likewise this study is the first to investigate the effect of working capital practices on the Nigerian economy. This therefore serves as the gap filled in this study. More so, return on assets (RoA) was used to proxy the dependent variable in most of the previous studies, while this study considered the Real Gross Domestic Product (RGDP) for the dependent variable. It is on this background that we beamed the searchlight on what extent does working capital practices influenced sustainable economy in Nigeria.

Thus, the main objective of the study was to determine the extent to Working Capital Practices (WCP) contributes to the Nigeria Economy over a period of nine (9) years from 2012 to 2018. While the specific objectives is to examine the effect of Working Capital Practices (WCP) on the sustainable performance of Nigerian Economy. The hypothesis was tentatively stated in null form as H_0: There is no significant impact of Working Capital Practices (WCP) on Sustainable economy performance of quoted non-financial firms in Nigeria.

LITERATURE REVIEW

Working Capital

Working Capital can be described as a company's entire investment in current assets and current liabilities. Kehinde (2011) explained that working capital is part of company's total capital which is employed in the short-term operators. Onaolapo and Kajola (2015) classified working capital into gross working capital and net working capital. They opined that gross working capital is regarded as the amount invested in a firm's current assets while net working capital is the excess of current asset over current liabilities.

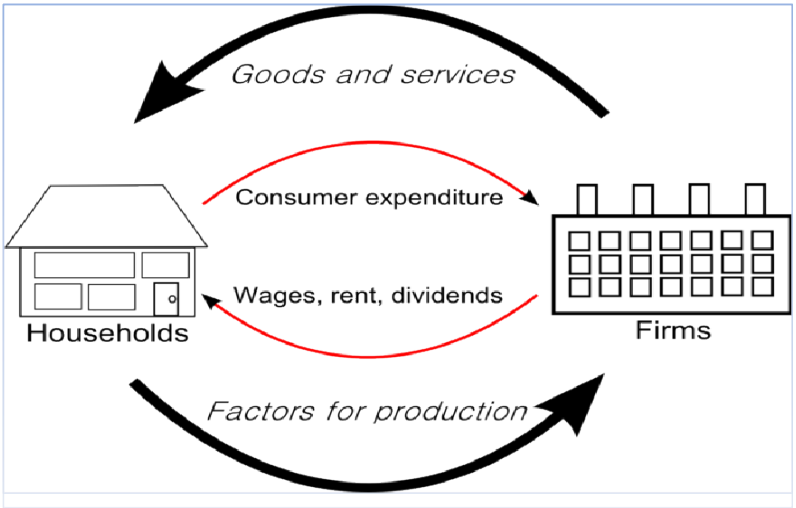
Kazi (2015) declared that working capital management involves the decision of using the current assets and current liabilities which are significant part in the day-to-day operating activities of that particular organization. To khan and Jain (2007) as cited in Soyemi and Olawale (2014) there are two concepts of working capital: gross and net. The term gross capital also referred to as working capital means total current assets of a business. The term net working capital is being argued and defined in two ways (i) net working capital (NWC) is the difference between current assets and current liabilities (ii) that portion of current assets which is financed with long-term funds.

Furthermore, Gitman (1994) cited in Bagh, et al (2016) defined Working Capital Management as the management of short-term assets and short-term liabilities of firms to balance the risks and profitability that have positive contribution in the value of firms. Ajayi, Abogun and Odediran, (2017) observe that Working Capital Management is the efficient and effective planning and controlling of short-term financing and investment decisions of the firm.

Nigeria Economy Performance

The performance of Nigeria economy is the measure of its economic growth determined by using Gross Domestic Product (GDP) (Uwakaeme 2015). The GDP which is the market value of all officially recognized final goods and services produced in the country in a particular time frame can be calculated using different approaches. According to Umeh (2015), the different approaches of calculating GDP as a measure of financial performance of an economy are the expenditure, income, and output approaches. The expenditure and the income approaches are expected to yield the same final GDP results. The Figure 1 presents a simple view of expenditure approach.

Figure 1: GDP Expenditure approach for economic growth



Source: Adapted from World Bank Economic Review (2021)

Figure 1 presents a typical economic system whereby the households receive wages, rent and dividends from the firms and use the fund to purchase the final goods and services. Since wages is used in the consumption (c), the expenditure approach to determine the GDP emphasizes on the final consumption to avoid double counting. The households contribute factors of production like labour, capital, and land to the firms which the firms use in producing goods and services, and the circular flows continues. The expenditure approach can be calculated using the formula below:

$$Y = C + I + G + (X-M).$$

Where: Y represents GDP, C stands for consumption, I represent investment, G stands for government expenditure, X stands for gross export, M stands for gross import, while X-M represents the net export.

Furthermore, Ugechukwu *et al.* (2015) described GDP as the positive and continued rise in the sum total of goods and services produced in the country within a given time period. When GDP is measured with the population of a given country, then economic growth would be stated as per capita income. Economic growth can also be stated in nominal or in real terms. Hence, when the increase in the sum total of goods and services is deflated by the rate of inflation, we have the real economic growth obtained, otherwise when measured without deflating by the rate of inflation, it is called nominal economic growth. Therefore, this study uses real gross domestic product to determine the level of performance of Nigerian economy proxied by the economic growth rate.

THEORETICAL REVIEW

A number of theories have been found in the literature to describe the working capital management and its relationship with performance. In this study, the Pecking Order Theory (POT) was leveraged on, which states that the cost of financing increases with asymmetric information. The POT elucidates that firms tries to utilize its internal financial sources first i.e., retained earnings, then issue debt and then would issue equity as a last result. That is why Myers and Majluf (1984) explained that firms most likely prefer to finance new investment with internally raised funds i.e., retained earnings, then with debt and issues equity as a final resort. Firms arrange their sources of financing, first preferring internal financing, and debt, lastly raising equity as a last resort. Myers and Majluf (1984 cited in Kajola and Onaolapo, 2015) postulates that the form of debt a firm chooses cam act as a signal of its need for external finance. They submitted that equity is less preferred means to raise capital because when managers issue mew equity, investors believe that managers think that the firm is overvalued, and managers are taking of this over – valuation. Consequently, investors will place a lower value to the new equity issuance.

EMPIRICAL REVIEW

The desire to understand the systematic relationship between working capital management and the performance of the economy had resulted in acute volume of empirical studies which has taken different dimensions of policy relevance in the literature. Such as Sorin and Anca (2021) investigate the relationship between working capital and firm profitability for a sample of 719 Polish listed firms over the period of 2007–2016. The study used a quantitative approach using different panel data techniques (ordinary least squares, fixed effects, and panel-corrected standard errors models). The results revealed an inverted U-shape relationship of working capital level and firm profitability, working capital has a positive effect on the profitability of Polish firms to a break-even point (optimum level).

Anh, Huong & Hang (2020) investigates the impact of working capital management on the firm's profitability. The research sample includes 119 non-financial listed companies on Vietnam stock market over a period of 9 years from 2010 to 2018. The study used the regression coefficients. The result revealed negative and significant impacts of the working capital management, measured by cash conversion cycle (CCC) and three components of the CCC including accounts receivable turnover in days (ARD), inventory turnover in days (INVD), and accounts payable turnover in days (APD) on the firm's profitability measured by return on assets (ROA) and Tobin's Q. It implies that firms can

increase profitability by keeping the optimization of the working capital management measured by the CCC, which includes shortening the time to collect money from clients, accelerating inventory flow and hold the low payment time to creditors. Besides, the profitability of firms was impacted by the sale growth rate, firm size, leverage, and age. Therefore, the study provides a new insight to managers on how to improve the firm's profitability with working capital management.

Olaoye, Adekanbi and Oluwadare (2019) examined working capital management and firms' profitability in Nigeria quoted firms on Nigeria Stock Exchange (NSE). A panel data methodology was used with different regression estimators to analyse this relationship based on a balanced panel of 10 listed firms during the period of 2008 – 2017. The study revealed that cash collection period aid and cash payment period exerted a negative impact on return on assets, though the impact was only significant for cash payment period on the ground of -0.06 (P = 0.000< 0.05) as against the estimate for cash collection period that stood at -0.032 (P = 0.077 > 0.05). The study revealed that the current ratio and inventory period exerted a positive impact on return on assets, though the impact was only significant for current ratio on the ground of 8.172 (P = 0.05) as against the estimate for inventory period that stood at 0.045 (P = 0.438 > 0.05). conclusively the study recommended that while the shorter collection was maintained, payment to creditor should not be elongated to enjoy cash discount (if any) and that firms should be proactive in the management of raw materials to avoid idle resources that might negatively impact their financial performance.
By the estimation of a structural equation model with survey data from 357 firms in the Italian wine industry, Annunziata et al, (2017) studied the role of organizational capabilities in attaining corporate sustainability practices and economic performance. Their findings indicate that collaboration with partners-suppliers and product innovation capability foster the implementation of proactive socio-environmental practices. Hence, the role of fostering corporate sustainability is not accidental but can be managed by taking different dimensions into account, namely motivation within the firm and interaction at organizational as well as systemic levels. In addition, the direct link between the proactive socio-environmental practices and economic performance, and their positive mediating effect on the capabilities identified and economic performance highlight the opportunity to trigger a virtuous circle to address corporate sustainability because organizations are involved at strategic and operational levels.

The growing, shrinking, and long run economic performance: historical perspectives on economic development were investigated by Broadberry and Wallis (2017). The made use of annual data from the thirteenth century to 2016 and show that improved long run economic performance has occurred primarily through a decline in the rate and frequency of shrinking, rather than through an increase in the rate of growing. Indeed, as economic performance has improved over time, the short run rate of growing has typically declined rather than increased. Most analysis of the process of economic development has hitherto focused on increasing the rate of growing. But their study, focused on understanding the forces making for a reduction in the rate of shrinking, drawing a distinction between proximate and ultimate factors. The main proximate factors considered are (1) structural change (2) technological change (3) demographic change and (4) the changing incidence of warfare. We conclude with a consideration of institutional change as the key ultimate factor behind the reduction in shrinking.

Cash conversion cycle and value-enhancing operations: Theory and evidence for a free lunch wa studied by Zeidan, R., & Shapir, O. M. (2017) while predicting that reductions in the cash conversion cycle should increase shareholder value, they decomposed working capital investments in the cash conversion cycle and growth effects in the presence of x-inefficiency. Direct evidence follows from a case study of a listed company in Brazil, MRV. It was revealed that changes in operations reduced CCC from 508 days in 2012 to 351 days in 2015, decreasing working capital requirements by US $1.02 billion. Indirect evidence comes from (1) a synthetic control comparing MRV's free cash flow to equity to its direct and distant competitors; (2) an event study of share prices, and (3) a dynamic cash flow estimation using Tobin's Q as the dependent variable. The study outcomes suggest that CCC management, controlling for effects on operating margins, result in higher stock prices and profitability, and increased cash flow.

Høebíèek *et al.* (2012) and Gupta and Kumar (2013) found that economic dimension is the most important measure as it shows financial strength and avoids the situation leading to early business failure. Global Reporting Initiative (GRI) is the most widely adopted framework for reporting sustainability of an enterprise (EY and BCCCC, 2013). Lin *et al.* (2014) studied how users and preparers rate the importance of performance indicators suggested by the GRI G3 Guidelines regarding the environmental, social, and economic impact of a company. The study found that the conflicting stakeholders, users, and preparers have agreed upon the sustainability reporting framework. The rule-making bodies and the government should promote sustainability reporting by mandating uniform standards in reporting and disclosure.

METHODOLOGY

Research Design

The research design adopted for this study was the descriptive *ex post facto* research design being a suitable technique for time order assessment of variables which in this case measured the effect of independent variables (Sales Growth, Inventory, Cash Conversion Cycle, firm size, Average Payment Period Net Profit Margin, Return on Asset and Return of Equity) on a given dependent variable (Real Gross Domestic Product) among quoted companies of non-financial sector over a period of seven (9) years from 2012 – 2020. Similarly, the population of this study consists of One hundred and eleven (111) companies of non-financial firms listed on Nigerian Stock Exchange under ten (10) sectors of the economy as recorded in the NSE fact Book of 2018. While the source of data was primarily Secondary data covering working capital management related data such as current assets, current liabilities, Quick assets, inventories, and financial performance of companies (Net profit, return on investment, return on assets, returns on equity) for 2012 to 2020 were sourced from the Annual reports and accounts of the sampled quoted non-financial firms and Nigeria Stock Exchange fact book.

Measurement of Variables

Dependent variable used in this study is the Economic Performance of Nigeria proxied by the Real Gross Domestic Product (RGDP).

Independent Variables*:* Working Capital management and represented by Cash conversation cycle, Average Payment Period, Inventory, Sales Growth, Net Profit Margin, Return on Asset and Return on Equity.

Control Variables

This control variable was introduced because of the notion that firm may also be affected by other factors not captured in the independent variables in which firm size is one (Adeusi *et al*, 2013) as well as sales growth.

Table 1: Measurement of variables

Independent variables	Description	Acronym	Source (s)
Net Profit Margin	Income after tax / Total Revenue or Sales	NPM	Zekeralem
Return on Assets	Net Profit after tax / Total Assets	ROA	Tadesse
Return on Equity	Net Profit after tax / Equity	ROE	Temtime 2016
Average Payment Period	Account Payable / Cost of sales x 365	APP	African and Padachi 2014
Inventory Turnover	Inventory / Cost of sales x 365	INV	Simon, Sawendi & Adul-Hamid
Cash Conversion Cycle	ACP + INV – APP	CCC	2012
Control variables			
Firms' size	Log of Total Assets	SIZE	Olayinka Uchenn
Sales Growth	Sales1 – sales o / Sales o/100	SG	& Modee

Model Specifications

The model for this study established the relationship between the dependent variable (Real Gross Domestic Product) and independent variable (working capital management). In order to_empirically ascertain the effect of working capital management on the economy among quoted non-financial firms in Nigeria, the empirical framework by Ajayi, Abogun and Odediran (2017) was adapted. The model is specified as follows:

EC = f(sg, inv, size, ccc, npm, roa, roe), independent (Inventory turnover). The empirical literature on working capital management for instance; Ajayi, Abogun and Odediran (2017), Yakubu, Alhassan and Fusani (2017), Kamau and Ayuo (2014), used Net margin, Return on asset and Return on Equity as the most common measures of performance. In this study, performance is measured by the Real Gross domestic Product of Nigeria. Independent variables for this study include: Inventory turnover, Net Profit Margin, Return on Asset, Return on Equity, Average Payment period (APP), and Cash conversion cycle (CCC) Current ratio. Control variables include: size and sales growth. The relationship can be established in a linear form as states below:

$$RGDP_{it} = \beta_0 + \beta_1 SG_{it} + \beta_2 INV_{it} + \beta_3 CCC + \beta_4 SIZE_{it} + \beta_5 APP_{it} + \beta_6 ROA_{it} + \beta_7 NPM_{it} + \beta_8 ROE_{it} + e_{it}$$

The β_1, β_2, $\beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$

The regression revealed the degree of dependent variable caused by the independent variables. The a prior expectation was that β_1, β_2,0 $\beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$

Coefficients of the independent variables ni measures the characteristics of each firm otherwise known as the observable heterogeneity,

eit = error term representing factors other than those specified in the model while

i = 1 – 111 non-financial firms

t = 2012 – 2020

Method of Data Analysis

The descriptive statistics to be used include measures of capital tendency such as mean, maximum, minimum and measures of variability such as standard deviation, skewness and kurtosis. The inferential statistics to be adapted included like Ordinary least square techniques, Pearson's product correlation analysis and Panel Regression analysis involving three models, Pooled Ordinary Least Square (POLS), Fixed Effect (FE) and Random Effect (RE).

Pooled OLS Estimation

In the pooled OLS model or constant coefficient model, all the observations are pooled together, and a grand regression is estimated neglecting the cross sectional and time series nature of the data. Thus, the model takes the form stated below:

$$Y_{it} = \delta_0 + \sum_{m=1}^{M} \delta_m X_{it} + \mu_{it} \quad \ldots 3.1$$

For *t* = 1,..,*T; i* = 1,….,*N; m* = 1, …., *M,*

Where, *T* is the number of observations over time, *N* number of cross-sectional units in the panel, and *M* number of regresses. Both the intercept and coefficient are constant across subject and over time.

Least Square Dummy Variable Fixed Effect Estimation

In this second approach known as the least squares dummy variable (LSDV) regression model, the unobserved effect is brought explicitly into the model. If we define a set of dummy variables D_i, where D_i is equal to *1* in the case of an observation relating to firm *i* and *0* otherwise, the model can be written

$$Y_{it} = \delta_0 + \sum_{i=2}^{N} \alpha_i D_i + \sum_{m=1}^{M} \delta_m X_{it} + \mu_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 3.2$$

Formally, the unobserved effect is now being treated as the co-efficient of the individual specific dummy variable.

Random Effect Model Estimation

The random effect model is specified on the notion that heterogeneity effect across cross sectional units and over time cannot be tracked in the fixed sense; rather it's a random effect that can only become a subset of the error term of the model.

$$Y_{it} = \delta_0 + \sum_{m=1}^{M} \delta_m X_{it} + e_{it} + v_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 3.3$$

Where:

Y_{it} = measure of operational efficiency and the economic growth rate

X_{ijt} = measures of working capital

$\mu_{it} = e_{it} + v_{it}$

Hausman Test

The selection of the best-suited model from the two was determined following the Hausman test. This test represents a distance measure between Random Effect Model and Fixed Effect Model with an H_0 that the Random Effects are better, consistent and efficient and an H_1 that Fixed Effects are better, consistent and efficient. Therefore, rejecting the alternative hypothesis means Random effects are upheld as against the Fixed Effect.

Post-Estimation Tests

Post estimation test was also conducted which include the restricted f-test of heterogeneity, Cross-Section independence test and autocorrelation test, heteroscedasticity Wald test.

RESULTS OF FINDINGS

The data was not initially normal, but however, was transformed into Inverse Distribution which consequently gave the result that KS test is normality distributed

Table 2: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
RGDP	.079	82	.200*	.946	82	.002
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Presented in table 3 is the summary of the description of the variables of this study. The discovery below indicates that the Real Gross Domestic Product (RGDP) growth of Nigeria for the 9years averaged 11.71083% and ranged from 5.066944% to a maximum of 18.56644% Return on Assets (ROA) of the sampled firm for the period covered have an average value of 0.215545% ranged from a negative return of -4.079226% to a maximum of 9.408417%. The inference is that for every one naira invested, the industry had made a loss of N0.21 and had made a maximum gain of N9.40. Also, the table revealed that Return on Equity (ROE) across the sampled firms have an average value of 0.190932% ranged from a negative return of -1.303854% to a maximum of 10.98261%. This implies that for every naira invested, the industry had made a loss of N1.30 and made a maximum gain of N10.98. Similarly, it was revealed from the table that Net Profit Margin (NPM) across the sampled firms have an average value of -2.044753%

ranging from a negative return of -126.3599% to a maximum of 4.776727%. The corollary of this implies that the industry made a loss of N125.3 for every naira invested and a maximum gain of N4.77. However, the firms were not paying their bills earlier than 152 days. It took an average of 101 days to convert inventories into sales. To check the size of the firms and its relationship with profitability, natural logarithm of assets was used as a control variable. The mean value of log of assets was 6.262983. While the standard deviation was 0.957875. The maximum value of log of sales is 2.625495 across the sampled firms for the period covered and a great loss of -16643.87.

Table 3: Descriptive Statistics

	RGDP	ROA	ROE	NPM	SG	INV	CCC	SIZE	APP
Mean	11.71083	0.215545	0.190932	-2.044753	-291.1020	-37926.62	-101139.1	6.262983	-140460.8
Median	11.66246	0.011680	0.067161	-0.001240	-0.013091	-182.0155	69.70732	6.430289	-152.1721
Maximum	18.56644	9.408417	10.98261	4.776727	2.625495	2624.143	1186234.	7.841951	531.2612
Minimum	5.066944	-4.079226	-1.303854	-126.3599	-16643.87	-1187010.	-4888059.	0.881841	-5812507.
Std. Dev.	4.058639	1.530093	1.272796	14.13659	1916.528	192929.7	749103.6	0.957875	878836.3
Skewness	0.048723	4.254287	7.632936	-8.451843	-7.913222	-5.058261	-5.830631	-2.242754	-6.171867
Kurtosis	2.160436	26.13735	64.82068	74.75163	66.75124	27.06180	36.92082	13.37067	39.12892
Jarque-Bera	2.440744	2076.420	13854.05	18566.27	14741.88	2327.824	4395.907	436.2079	4980.362
Probability	0.295120	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	960.2880	17.67471	15.65642	-167.6697	-23870.37	-3109982.	-8293406.	513.5646	-11517782
Sum Sq. Dev.	1334.276	189.6358	131.2207	16187.31	2.98E+08	3.01E+12	4.55E+13	74.31947	6.26E+13
Observations	82	82	82	82	82	82	82	82	82

Source: Researchers data analysis, 2021.

Table 4 below revealed the relationship between the outcome variables and the predictors. It was revealed that RGDP maintained a negative and insignificant relationship with ROA, NPM, APP, Inventory, CCC and size to the tune of --.119, -.134, -.091, -.054, -.092 and -.180. However, the relationship between RGDP and SG was significant positive, .228 (p-0.04). This is an indication that sales growth (SG) moves towards the same direction with the other outcome variables, Real Gross Domestic Product (RGDP).

Table 4: Pearson Correlations Matrix

		RGDP	ROA	ROE	NPM	SG	APP	Inv.	CCC	Size
RGDP	Pearson Correlation	1								
	Sig. (2-tailed)									
	N	82								
ROA	Pearson Correlation	-.119	1							
	Sig. (2-tailed)	.287								
	N	82	82							
ROE	Pearson Correlation	.206	-.037	1						
	Sig. (2-tailed)	.064	.739							
	N	82	82	82						
NPM	Pearson	-.134	.025	.014	1					

	Correlation									
	Sig. (2-tailed)	.230	.824	.899						
	N	82	82	82	82					
SG	Pearson Correlation	.228*	.014	.030	-.020	1				
	Sig. (2-tailed)	.040	.900	.786	.860					
	N	82	82	82	82	82				
APP	Pearson Correlation	-.091	.024	.031	-.072	-.025	1			
	Sig. (2-tailed)	.416	.830	.781	.518	.827				
	N	82	82	82	82	82	82			
Inv.	Pearson Correlation	-.054	.029	.023	-.066	-.023	.734**	1		
	Sig. (2-tailed)	.633	.797	.836	.555	.840	.000			
	N	82	82	82	82	82	82	82		
CCC	Pearson Correlation	-.092	.020	.030	-.068	-.023	.985**	.604**	1	
	Sig. (2-tailed)	.411	.855	.788	.546	.834	.000	.000		
	N	82	82	82	82	82	82	82	82	
Size	Pearson Correlation	-.180	-.053	-.001	-.076	.006	.177	.178	.160	1
	Sig. (2-tailed)	.106	.635	.995	.497	.959	.112	.110	.152	
	N	82	82	82	82	82	82	82	82	82

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

The regression analysis revealed the effect of working capital practices of quoted non-financial firms on the economy of Nigeria. There are three models based on the specific objectives and the analysis covered pooled OLS estimation, fixed effect estimation and random effect alongside post-estimation tests. For the fixed effect estimation, the study jointly incorporated firms' heterogeneity effect and period effect into the model using a dummy approach in which each firm and year was assigned an intercept term. A browse of the table 5 below shows that The POLS and FE models revealed that only Sales Growth (SG) was found to significantly influence RGDP at 0.05level of significant, while RE does not show any of the variables impact on RGDP. However, series of test were conducted to select the best models out of the three models in the subsequent tables below.

Table 5: Estimation results for the POLS, FE and RE models

Variables	Model I POLS	Model II Fixed Effect (FE)	Model III Random Effect (RE)
C	16.48092 (0.0000)	18.02727 (0.0000)	16.47031 (0.0000)
ROA	-0.312482 (0.2751)	-0.412732 (0.2503)	-0.312590 (0.2985)
ROE	0.638186 (0.06555)	0.571193 (0.1509)	0.638307 (0.0790)

NPM	-0.042666 (0.1704)	-0.049065 (0.1557)	-0.042668 (0.1914)
SG	0.000470 (0.0415)*	0.000552 (0.0375)*	0.000470 (0.0519)
INV	5.14E-07 (0.8566)	3.27E-05 (0.4955)	2.16E-05 (0.6242)
CCC	-4.76E-07 (0.5153)	3.28E-05 (0.5003)	2.06E-05 (0.6398)
SIZE	-0.771555 (0.1027)	-1.021107 (0.0621)	-0.770001 (0.1206)
APP	2.03E-05 (0.6273)	-3.33E-05 (0.4942)	-2.10E-05 (0.6322)
R-squared	0.168197	0.196170	0.168389
F-statistic	1.845145	0.918756	1.847682
Prob(F-statistic)	1.845145	0.556134	0.081788
Durbin-Watson stat	0.951220	1.059086	0.951220

Note: Significant levels in parenthesis
Significant at 0.05 level.

Hausman Test

Table 6 below reported Chi-square statistic of 2.211885 and a probability value of 0.9738. The result revealed that there is not enough evidence to reject the null hypothesis that differences in coefficients of fixed effect estimation and random effect estimation is not significant. Hence, the difference in the coefficient is not systematic. Therefore, the Hausman test implies that the most consistent and efficient estimation is given by the random effect estimation model.

Table 6: Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.211885	8	0.9738

** WARNING: estimated cross-section random effects variance is zero.

Random Effect Estimation Model

The regression estimation equation: $RGDP_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 NPM_{it} + \beta_4 SG_{it} + \beta_5 INV_{it} + \beta_6 SIZE_{it} + \beta_7 CCC_{it} + \beta_8 APP_{it} + e_{it}$ revealed the substituted coefficients as: RGDP = 16.47031 -0.312590*ROA + 0.638307*ROE - 0.042668*NPM + 0.000470*SG + 2.16E-05*INV - 0.770001*SIZE + 2.06E-05*CCC - 2.10E-05*APP as shown in

table 7 below implies that the R^2 of 0.168389 shows the percentage of variation in dependent variable (RGDP) caused by the independent variables (ROA, ROE, NPM, SG, INV, CCC AND APP). The result signifies that 16.83% of the changes in Real Gross Domestic Product (RGDP) is caused by the independent variables. The probability of F-statistics of 0.081788 implies that the model is fit and further shows that the variables have been appropriately selected. The effect of this is that Working Capital Practices of non-financial firms in Nigeria has no statistically significant effect on the Nigerian Economy proxied by Real Gross Domestic Products (RDGP).

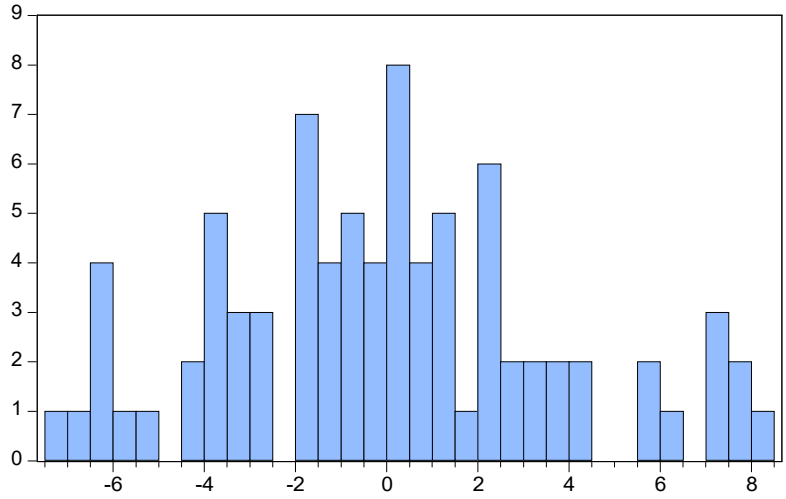
Table 7: Random Effect Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.47031	3.135988	5.252031	0.0000
ROA	-0.312590	0.298511	-1.047164	0.2985
ROE	0.638307	0.358270	1.781638	0.0790
NPM	-0.042668	0.032355	-1.318759	0.1914
SG	0.000470	0.000238	1.976196	0.0519
INV	2.16E-05	4.38E-05	0.492021	0.6242
SIZE	-0.770001	0.490279	-1.570536	0.1206
CCC	2.06E-05	4.38E-05	0.469969	0.6398
APP	-2.10E-05	4.38E-05	-0.480666	0.6322

R-squared	0.168389	Mean dependent var	11.71083
Adjusted R-squared	0.077254	S.D. dependent var	4.058639
S.E. of regression	3.898715	Sum squared resid	1109.599
F-statistic	1.847682	Durbin-Watson stat	0.951220
Prob(F-statistic)	0.081788		

Residual Test

The figure below shows the Jarque-Bera plot for normality of the data to be 1.146021, p-value 0.563825 which is above 0.05 implies that the data I normally distributed.



Series: Standardized Residuals
Sample 2012 2020
Observations 82

Mean	-6.31e-15
Median	-0.024449
Maximum	8.009548
Minimum	-7.451455
Std. Dev.	3.701182
Skewness	0.250242
Kurtosis	2.708561
Jarque-Bera	1.146021
Probability	0.563825

Cross-Sectional Dependence Test

Table 7 revealed that there is no enough evidence to reject that there is no cross-sectional dependence across the quoted non-financial firms sampled for this study. Hence, it can be established that there is no cross-sectional dependence for the estimated panel model.

Table 8: Pesaran Test of Cross-sectional Dependence

Hull Hypothesis	Chi-square stat	Probability
No cross-sectional dependence	0.268	0.7889

Source: Data Analysis (2021)

Heteroscedasticity Test

Table 9 revealed that there is not enough evidence to reject the assumptions of an equal variance of residual terms across the quoted non-financial firms sampled for this study, reflecting that the variance around the regression line is the same for the values of the predictor.

Table 9: Modified Wald Test for Groupwise Heteroscedasticity

Hull Hypothesis	Chi-square stat	Probability
Static panel homoscedasticity	0.22	0.6507

Source: Data Analysis (2021)

Autocorrelation Test

Table 10 revealed that there is not enough evidence to reject that the assumption that there is no serial correlation in the panel model across the quoted non-financial firms sampled for this study, reflecting that there is no presence of auto-correlation.

Table 10: Wooldridge Test of Panel Autocorrelation

Hull Hypothesis	Chi-square stat	Probability
No AR(1)panel autocorrelation	0.7160	0.8190

Source: Data Analysis (2021)

SUMMARY AND CONCLUSION

This study started with a brief introduction, statement of the problem, research questions, and research objectives. It reviews literature of past research works of other researchers in the field of working capital management and economic performance that are applicable and relevant to the study. The study adopted an ex-post facto research design. Secondary data were obtained from the database of World Bank as awell as the 9ears (2012-2020) financial reports of the firms and thereafter were analysed e-views 7.1, using three (3) models, such as Pooled Ordinary Least Square, Fixed Effect and Random Effect regression analysis respectively.

In the course of this research work we revealed the following findings in line with the objectives of the study. The Hausman test result shows that Random Effect was the appropriate model also, all of the working capital variables comprising Return on Asset (ROA), Return on Equity (ROE), Net Profit Margin (NPM), Sales Growth (SG), Inventory control (INV), Cash Conversion Cycle (CCC), SIZE, and Average Payment Period (APP) has no significant effect on Nigerian Economy jointly, whereas ROA, NPM, SIZE and APP were found to be individually and insignificantly contributed to RGDP. Also, the study revealed that ROE, SG, INV, and CCC individually have a positive and insignificant relationship with RGDP.

CONCLUSION

The study concluded that the different working capital practices of financial managers in Nigeria proxies, ROA, ROE, NPM, SG, INV, SIZE, CCC and APP adopted in this study does not individually contributes to Real Gross Domestic Product. This, however, implies that the working capital practices of quoted non-financial firms in Nigeria contributed an insignificantly 13% to the Nigerian economy in terms of the Real Gross Domestics Product.

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