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Working capital management (WCM) optimality and financial performance parameters of firms in the Nigeria consumer goods sector

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Abstract
The paper investigated the effect of working capital management (WCM) Optimality on the performance of consumer goods firms in Nigeria spanning from 2013 to 2020. Specifically, the study investigated the effects of WCM indicators on the return on assets-ROA, return on equity-ROE, and earnings per share-EPS, of consumer goods firms in Nigeria. WCM proxies were decomposed into five variables being account receivable management (ARM), account payable management (APM), inventory management (INVM), cash conversion cycle (CCC) and cash conversion efficiency (CCE). The data for the study were collected from the Financial Statement and Annual Accounts of the selected firms covering a data panel framework of 8 years period (2013 to 2020) and nine (9) firms which were selected; each has 72 observations for each variable. The analysis was based on fixed and random effects models determined using the Hausman test. The results showed that WCM has over 75% explanatory effect on ROA, ROE, EPS, firm value and EVA of consumer goods firms within the period under study. However, the WCM indicators exhibited mixed effects on the financial performance parameters. Hence, the study concludes that the major drivers of WCM are account receivables, inventory, account payables, and cash conversion cycle, with mixed effects. As such, the paper aver that among others that managers of the consumer goods firms should avoid holding unnecessary current liabilities that increase bill payable which are not productive because the unpaid liabilities have a negative influence on the returns on assets of consumer goods firms.

Keywords: working capital management optimality, financial performance parameters, Nigeria consumer goods sector

Introduction
The four (4) dimensions of a firm's financial management decision are investment decision, financing decision, dividend decision and working capital management. The latter being working capital management (WCM) is considered to be a vital issue in liquidity and short-term investment decisions of the firm. Asiedu, Adegbedzi, Oduro, and Iddrisu (2020) [5] submitted thatactually required to run the wheels of the business enterprise on daily basis. This if well managed will ensure that liquidity risk are at bay since a high liquidity risk increases profitability but reduces firm liquid base. As such, thechallenge here is for a firm to ensure that it balances both its over-due liabilities and assets from one end, and the risk of defaults and returns from another end (Pinku & Paroma, 2018) [22].
Furthermore, WCM affects the firm's liquidity as well as its profitability since optimal WCM creates the firm's value. The phrase working capital accounts for the amount of money needed to cover day-to-day business expenses (Asiedu, Adegbedzi, Oduro, & Iddrisu, 2020) [5]. It is truly essential to keep the company moving. The goal of WCM is to increase earnings, which reduces the risk of not being able to over-due maturing short-term obligations. The effectiveness of WCM is based on the balance between profitability and liquidity. The high liquidity risk of a company leads in great profitability.
Vartak and Hot chandani (2019) [226] stated that, WCM optimality ensures that a company has sufficient cash flows in order to meet its short-term debt obligations and operating expenses (Wang, Akbar &Akbar, 2020). WCM optimality is a very critical to a firm as it affects both its profitability and liquidity (Pinku&Paroma, 2018) [22]. WCM is important for many reasons. Firstly, over half ofthe total assets of the manufacturing firm accounts are current assets. Thus, WCM constitute a major portion of WCM (Al-Mawsheki, Ahmad &Nordin, 2019).
Mabandla and Makoni (2019) [17] discovered that industries that adopteddebt and equity principles to make WCM decisions usually result inlow capacity utilization and inability to provide sufficient fund. However, toofew current assets may occasion difficulties in maintaining smooth firm operations (Mabandla, &Makoni, 2019) [17]. Furthermore, WCM aimed at ensuring that each of the WCM components is at optimal level. That is, cash, account receivables, inventory and account payables is a fundamental part of the overall corporate strategy

to create value and is an important source of competitive advantage in businesses (Kasozi, 2017) [13]. More so, keeping an optimal balance among each of the working capital components is the hallmark of efficient WCM (Kasozi, 2017) [13].

In reality, the issue which most business managers face is on how to choose the most appropriate working capital parameter that can minimize risk, prepares a firm against uncertainty and at the same time improve the overall performance of their businesses (Simon, Sawandi& Abdul-Hamid, 2018). However, a critical look at the Nigerian manufacturing sector which the Nigerian consumer goods sector resides reveals that, the Nigeria consumers goods firms has a large spectrum of short-term financing needs, which has created a dilemma to managers on the size of inventories and periodic receivables to keep the firms profit and yet liquid to maintain credibility and enhanced credit rating. This is even more pronounced for the high exigency-prone operational sectors. More so, Nigerian manufacturing firms of which the consumer goods firms are among have suffered from some inadequacies such as poor debts management, and poor investment management (Gao& Wang, 2017). This has resulted in consistent bad debts, high inventory cost and eventual adverse effect on firm performance. High profit may not indicate effective WCM optimality as a firm could just have large asset and high profit base but runs the risk of liquidity if such assets cannot readily be turned into cash.

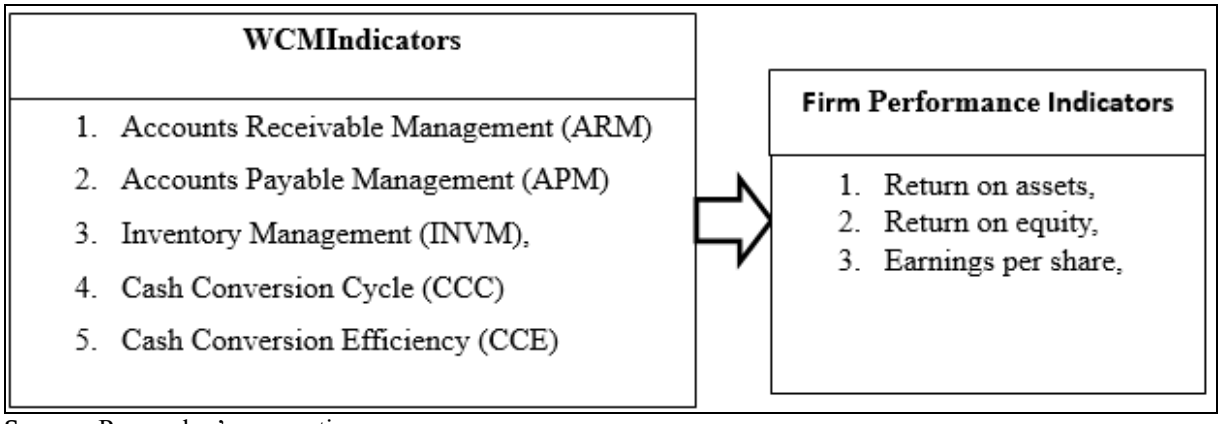
Empirical opinions on WCM and firm performance nexus have remained inconclusive. This is so, even for a developing economy as Nigeria, where funds are dearth. These inconsistencies result from conflicting findings between the proponents of negative effects where WCM was expected to enhance performance (Wang, Akbar, & Akbar, 2020), and the positive effect proponents who argue that using large volume of WCM inhibits firm performance and growth (Khalid, Saif, Gondal, & Sarfraz, 2018) [14]. More of confusion is the mixed findings from recent researchers like Simon, *et al* (2019), Vartak and Hot chandani (2019) [19], Ling, Ali and Ming (2019) [16], Kasozi (2017) [17]. These extreme positions put investors at cross roads in using firm external information in evaluating corporate performance for investment decisions. This study will streamline these conflicts by using appropriate variables that will capture the WCM dynamics which enhance firms performance and ultimately increase overall national output. Specifically, the study examined the effects of WCM optimality on the return on assets-ROA, return on equity-ROE, and earnings per share-EPS.

Literature Reviews

Conceptual Linkages

WCM has been seen as essential for day to day running of firm operations. It is a truism that WCM requirements of firms must be financed: the greater the WCM, the more capital need to be financed. Also, a firm may either finance its financing gaps either using short term or long terms funding sources. Either which either affect the performance of the firm positively or negatively. Thus, the manner in which working capital is financed affects the performance of an organization (Baños-Caballero, *et al*, 2016).

Over the years, WCM optimality has been conceived as a strategy for managing the liquidity position of firms and striking a balance with expected firm performance. This conception originates from the trade-off between firm liquidity and profitability. This supposes that there is a link between firm's WCM Parameters and their FIP indicators are expressed below:



Source: Researcher's conception

Fig 1: Conceptual relationship between WCM Indicators and FIP Indicators as conceived by the Researcher.

WCM Indicators and ROA nexus

The idea of WCM is that aims to evaluate the liquid assets of the firm with the aims to enhancing corporate objective such as improving return on asset. The variables of WCM include account receipts, payments, and stock of inventories. Cash receipts are expected to increase the liquidity of the firm while payments reduce available cash. Inventory is as aspect of current assets that gets closer to cash as production process commences and finished goods are made. The extent to which inventory is near cash is determined by the production process and the firms trade credit policies. Thus,WCM would have a negative relationship with return on assets. Hence, the paper hypothesizes:

$H0_1$: WCM indicators (ARM, APM, INVM, CCC, and CCE)do not affect the ROA of consumer goods firms significantly

WCM indicators and ROE nexus

ROE is one of the shareholders wealth maximisation paradigms. Working capitals affects the extent to which wealth maximisation objectives of the investors can be achieved. Large investment in current assets under certainty would mean low rate of return of the firm (ROE) as excess investments in current assets will not earn enough return. The ultimate/overallgoal of any firm is profit/earnings maximization. However, the firm may also desires to preserve liquidity objective too. This may result toconflict of interest as increase in one-profit/earnings maximizationmay result in reduction of the other-liquidity objective (Uguru, Chukwu&Elom, 2018). This implies that both liquidity and profitability are in most times non-linear. Hence, the paper hypothesizes:

$H0_2$: WCM indicators (ARM, APM, INVM, CCC, and CCE)do not affect the EPS of consumer goods firms significantly

WCM indicators and EPS nexus

Earnings per share are one of the performance indicators that has appeal for firm valuation. As managers endeavour to maintain liquid capitals for meeting short-time (day to day) financial obligations, they will pay special attention to maximising shareholders wealth. The primary questions from the investors are how much (in rate) does our investment in share return. Working capital is not used for investments that generate the expected returns to reward investors for their funds. Any money kept for working capital denotes non-income yield fund. Thus, the higher the amount of WCM, the less the propensity to generate income from capital available to the firm. The money kept for working capital has return equal to the opportunity cost. Hence, the paper hypothesizes:

$H0_3$: WCM indicators (ARM, APM, INVM, CCC, and CCE)do not affect the EPS of consumer goods firms significantly

Theoretical Review

Both thetrade-off and the transaction cost theories were used to underpin this study. Specifically, the trade-off theory, the outcome should lie between the intentions of the firm managers. Firms that want to maintain adequate and relatively high level of liquidity will commit more funds to meeting day to day payment obligations. Such funds will be short of investment opportunities that earns income. Meanwhile, the Transaction cost theory posits that transactions will be handled in such a way as to minimize the costs involved in carrying them out (Akinleye & Adeboboye, 2019). The theory holds that, firms desiring to carry out a particular course, the firm must have to incur some costs which is termed transaction costs (Madugba&Ogbonnaya, 2016). As such, the rationale behind this theory is that since market costs are too expensive for a firm, the firm must have to set aside working capital to finance its day to day transactions.

Empirical Studies

Most existing WCM indicators and FIP studies have existed over time though with varying outcomes. This section reviewed WCM indicators against the five FIP parameters in five sequentially:

Within the WCM indicators and ROA, WCM indicators (ARM, APM, INVM, CCC, and CCE) exerted mixed effects on ROA. Evidently, Uguru, Chukwu&Elom (2018) found that both ARM and INVM have positive effects on ROA while CCC had negative effect on ROA. Similarly, Mabandla and Makoni (2019) [17] found that, ARM had high adverse effects on ROA in the South African food and beverage industry.

Just has in the case of WCM indicators and ROA, studies on WCM indicators and ROE nexus are mixed especially as regards direction of linearity. For example, Yakubu, Alhassan and Fuseini (2017) reported that, ARM were found to have high significant effects while ARM and CCC adversely affected performance (ROE) of non-financial firms in Ghana though INVM had no effect. Even in a very recent study by Phuong and Hung (2020) which was carried out in Vietnam reported that ARM, APM and CCC all had negative effects on ROE.

Within the confine to WCM indicators and firm value nexus, Uwaoma and David (2017) and others that WCM boosts EPS of quoted firms. Despite the general assertion, there is no agreement on the direction and strength of the relationship of the individual variables on EPS. Evidently, Bagh, Nazir, Khan, Khan and Razzaq (2016) that inventory has negative significant impact on EPS. However, ample of studies such as Madugba&Ogbonnaya (2016) andAkinleye&Adeboboye (2019) showed divergent opinion whereinAPP and ACP have effects on EPS (Madugba&Ogbonnaya, 2016) but ACP and APP had insignificant effects on EPS (Akinleye&Adeboboye, 2019).

Just has in the case of WCM indicators and ROA, studies on WCM indicators and ROE nexus are mixed especially in terms of direction of relationship. For example, YAl-Mawsheki, Ahmad and Nordin (2019) aver that CCC has a significant negative on EVA.

Literature Gap

The observed inconsistencies in extant empirical literature noted above portents a research gap. There is no agreement amongst the researchers in Nigeria, on the effect of WCM on firm performance.

Most of the previous studies done in Nigeria have used time frame below 2017. This suggests that empirical evidences on WCM are fast becoming obsolete in Nigeria. Some of the studies seems recent by date of publication, the time frame of data coverage are relatively old ending in 2014 (Abdulazeez, *et al* 2018; Uguru, *et al* 2018), 2015, (Simon, *et al* 2018), 2016 (Osuma&Ikpefan, 2018), and 2017 (Akinleye&Adeboboye, 2019). The very current studies in Nigeria like Etale and Oweibi (2020) used only one firm (Dangote Sugar) to examine the effects WCM across quoted firms.

It is also noteworthy that some of the studies in Nigeria, unlike their foreign counterparts, did not disaggregate WCM indicators into separate models that would enable managers and corporate finance experts to appreciate the role of each strategy on firm performance.

Again, only few studies in Nigeria considered the effect of WCM on firm value. This study seems to be one of them to do so.

Methodology

Considering the fact that the captured WCM and FIP parameters are secondary in nature, the study adopted the *ex-post-facto* research design is adopted for this study. Meanwhile, the study population covers all the 20 quoted firms in the Nigeria consumer goods sector as at 31st December, 2021 (Table 1). To further streamline the study, some caveats were created. Accordingly, the criteria for inclusion of these firms into the sample are as follows:

1. They must be quoted consumer goods sector firms.
2. They must have been rendering annual financial report to the public from 2013 to 2020.
3. The data for the computation of variables of the study must be available in financial report of the selected firms.

Following the above criteria, nine (9) firms were selected. This is about 45% of the quoted consumer goods firms in Nigeria being the target population. The sample size is justified by the claim that a good sample covers at least 10%-30% of the representative population (Mugenda&Mugenda, 2003). The sampled firms thereof are shown on Table 1.

Table 1: Sampling Frame

SN	Name of Company	Acronym	Remark	Selection
1	Cadbury Nigeria Plc.	Cadbury	S	√
2	Champion Brew. Plc.	Champion	S	√
3	Dangote Sugar Refinery Plc	Dangsugar	S	√
4	DN Tyre & Rubber Plc	Dunlop	NS	X
5	Flour Mills Nig. Plc.	Flourmill	S	√
6	Golden Guinea Brew. Plc.	Goldbrew	NS	X
7	Guinness Nig Plc	Guinness	S	√
8	Honeywell Flour Mill Plc	Honyflour	S	X
9	International Breweries Plc.	Intbrew	S	X
10	Mcnichols Plc	Mcnichols	S	X
11	Multi-Trex Integrated Foods Plc	Multitrex	NS	X
12	Northern Nig. Flour Mills Plc.	Nnfm	S	X
13	Nascon Allied Industries Plc	Nascon	S	X
14	Nestle Nigeria Plc	Nestle	S	√
15	Nigerian Breweries Plc.	NB	S	√
16	Nigerian Enamelware Plc.	Enamelwa	S	X
17	P Z Cussons Nigeria Plc.	PZ	S	√
18	Unilever Nigeria Plc.	Unilever	S	√
19	Union Dicon Salt Plc.	Uniondicon	S	X
20	Vitafoam Nigeria Plc.	Vitafoam	S	X
	Number of Selected Firms		17	9

Sources: NSE (2021). Available at http://www.nse.com.ng/issuers/listed-securities/listed-companies

Data were collected from the Financial Statement and Annual Accounts of the selected firms spanning 2013 to 2020, being the most current period for data availability. Since the data set is a panel framework, a total of 71 observation for each variable were considered consisting 8 years period (i.e. 8 years periods multiplied by 9 cross-section of firms) Econometrically, the five models so far developed in equation 1 to 3 were analysed based on panel data regression techniques. The models contain a time series data covering 2013 to 2020 and a cross section of 9 firms. Studies have posited the need to control for individual unobserved heterogeneity in these models from panel data set (Woodridge, 2002 and Hsiao, 2003). Thus, the study chooses between the Fixed Effect Model and Random Effect Model. The Hausman test preliminary test was also be conducted to determine the most suitable form of panel regression model for each of the specific objectives. The decision rule of the

Hausman's specification test is that fixed (F)and random (R)effects models do not differ substantially and are stated as follows:
Ho: Accept that Random effects is consistent and efficient if its p-value is greater than 5%
Hi: Accept that fixed effects are consistent and efficient if its p-value is lesser than 5%**.**

Model 1: ROA and WCM Indicators
The model for specific objective 1 is adapted from the studies of Simon, Sawandi& Abdul-Hamid (2018) but differs from theirs as it factored in firm size, sales growth and financial debt ratio for all the non-financial firms in Nigeria. Hence, the present model of this study is:

$$ROA_{it} = \alpha_0 + \beta_1 ARM_{it} + \beta_2 APM_{it} + \beta_3 INVM_{it} + \beta_4 CCC_{it} + \beta_5 CCE_{it} + \beta_6 FS_{it} + \mu_{it}$$

Where:
μ = Random error term
α = Constant
i = the notation to present number of firms in the model
t = the time period of the time series
b_1, b_2, b_3, b_4, b_5, and b_6, are the coefficients of the regression equation

NB: Refer to table how the studied variables are denoted and operationalized
Model 2: ROEand WCM Indicators
The model for specific objective 2 is adapted from the work of Asiedu, *et al* (2020) which employed four WCM variables (ARM, APM, INVM, and CCC). Asiedu, *et al*but the present study differs from theirs as it added CCE and condoled the firm size. The present model of this study is:
$ROE_{it} = \alpha_0 + \beta_1 ARM_{it} + \beta_2 APM_{it} + \beta_3 INVM_{it} + \beta_4 CCC_{it} + \beta_5 CCE_{it} + \beta_6 SIZE_{it} + \mu_{it}$
Where:
μ = Random error term
α = Constant
i = the notation to present number of firms in the model
t = the time period of the time series
b_1, b_2, b_3, b_4, b_5, and b_6, are the coefficients of the regression equation.

NB: Refer to table 3 on how the studied variables are denoted and operationalized
Model 3: EPS and WCM Indicators
The study of specific objective 3 aims to find out the effect of WCM on earnings per share (EPS). The work of Akinleye and Adeboboye (2019) is adapted but differs from their model as it factored in firm size and CCC into the model. As such, the model can be written as:

$$EPS = f(ARM, APM, INVM, CCC, CCE, SIZE)$$

The function can be written as equation as follows:

$$EPS_{it} = \alpha_0 + \beta_1 ARM_{it} + \beta_2 APM_{it} + \beta_3 INVM_{it} + \beta_4 CCC_{it} + \beta_5 CCE_{it} + \beta_6 FS_{it} + \mu_{it}$$

Where:
μ = Random error term
α = Constant
i = the notation to present number of firms in the model
t = the time period of the time series
b_1, b_2, b_3, b_4, b_5, and b_6, are the coefficients of the regression equation.

NB: Refer to table how the studied variables are denoted and operationalized

Table 2: *Appriori* expectations of the explanatory variables on firm performance

SN	Variables	Acronym	ROA	ROE	EPS
1	Accounts Receivable Management	ARM	-	-	-
2	Accounts Payable Management	APM	-	-	-
3	Inventory Management	INVM	-	-	-
4	Cash Conversion Cycle	CCC	-	-	-
5	Cash Conversion Efficiency	CCE	-	-	-
6	Firm Size	FS	+	+	-

Sources: Researchers conception and extract from reviewed literature

The proxies and measurement for each of the variables explained are shown on Table 2 below:

Table 3: Acronyms and the Measurement of Variables

SN	Acronym	Measurement	Proxy
1	ROA	Profit after tax divided by total assets	Dependent
2	ROE	Profit after tax divided by total equity	Dependent
3	EPS	Net Profit/Total Shares	Dependent
4	ARM	[(Account receivable/Sales) x 365]	Independent
5	APM	[(Account payable/Purchases) x 365]	Independent
6	INVM	[(Inventory/cost of sales) x 365]	Independent
7	CCC	[ARM + INVM – APM].	Independent
8	CCE	[Cash-flow from operations/sales]	Independent
9	SIZE	Natural logarithm of the firm total assets at the end of the financial year	Control

Note: S = Sampled, NS = Not sampled.
Source: Extracts from Vartak and Hotchandani, (2019), Ling, *et al* (2019), Simon, *et al* (2018).

Empirical Analysis and Policy Formulation
Data Analysis
The regressed data are analyzed thus:
Descriptive Statistics
The behaviours of the study variables are section into two tables. The first table centred on the targeted regressand while the second table focused on the regressors.
The description of the dependent variables shown on Table 5 below has mean as ROA (5.11), ROE (17.89), and EPS (56.69). The corresponding standard deviation for the variables isROA (8.20), ROE (35.11), and EPS (154.33). The results show that the standard deviation for ROA, ROE, and EPS are relatively larger than their respective means, an indication of wide variation and instability of the series.
In the case of the explanatory variables shown on Table 4 above, the mean and the standard deviations of the variables are ARM (17.28 and 16.48), APM (56.98 and 41.48), INVM (54.29 and 101.81), CCC (11.60 and 102.43), CCE (11.48 and 11.76) and FS (17.98 and 1.08). Only INVM and CCC had standard deviations copious margin from the mean, indicating propensity for high variation across the sampled firms.

Table 4: Analysis of the Targeted regressand

Variables/Unit of Measurements		Mean	Maximum	Minimum	Std. Dev.	Obs.
ARM	(%)	17.28	74.14	0.42	16.48	72
APM	(%)	59.98	175.40	0.08	41.48	72
INVM	(%)	54.29	750.01	1.16	101.81	72
CCC	(%)	11.60	691.69	-101.84	102.43	72
CCE	(%)	11.48	46.04	-19.05	11.76	72
ROA	(%)	5.11	26.49	-20.83	8.20	72
ROE	(%)	17.89	133.84	-142.91	35.11	72
EPS	(%)	56.69	570.00	-574	154.33	72
FS	(LN)	17.98	19.91	15.55	1.082	72

Sources: Eviews 9 (2022)

Diagnostic Test of the Models
To ensure that the regressed results are properly interpreted and that are not faced with distortions, the model were subjected to two panel data diagnostic tests which are: normality and Heteroskedascity test. The normality test reported in table 5below signals that only WCM and ROA passed the test of normality. Meanwhile, the Heteroskedascity Test stated in table 6 below signals that the error of the residuals spreads in equal proportion. That is, the model is fit for prediction

Table 5: Normality Test for WCM and FIP Models

Models	Jarque-Bera (JB) Statistics	Prob. Value	Remarks
WCM and ROA	2.3005	0.3166	Normally distributed
WCM and ROE	32.4117	0.0000	Lacks normal distribution
WCM and EPS	27.6035	0.0000	Lacks normal distribution

Sources: Eviews 9 (2022)

Table 6: Heteroskedascity Test for WCM and FIP Models

Models	Breusch-Pagan LM Statistics	Prob. Value	Remarks
WCM and ROA	110.9873	0.0610	Homoskedastic

WCM and ROE	97.02650	0.1370	Homoskedastic
WCM and EPS	54.28337	0.1258	Homoskedastic

Sources: Eviews 9 (2022)

Model Estimation

The model estimation is the panel regression of the models proposed in section three. The results for Fixed Effect and Random Effect are produced for each model and the Hausman statistics was employed to determine the most suitable between panel models. The estimation is performed for each model in line with the specific objectives of the study.

Table 7: Synopsis of the Findings

Variables	ROA Model	ROE Model	EPS Model
R-Squared	0.90**	0.97*	0.78**
ARM	61.26*	-24.53*	3372.01**
APM	-21.34*	24.19*	-3373.79
INVM	11.34*	-24.21*	3374.96**
CCC	-61.33*	24.23*	-3374.87
CCE	0.09	0.032*	2.07
FS	2.64	14.66	39.10
C	-41.57	-239.12	-690.78
Model of Analysis	RE	RE	FE
Hypotheses Testing	Accepted	Accepted	Accepted

Note: * denotes significant at 1%, ** denotes significant at 5%; *** denote significant at 10%.
Source: E-Views 9.

Discussion of Findings

The discussion of the findings was done along the line of the objectives of the study.

WCM Indicators and ROA nexus

The result of objective one revealed that WCM strategies have high effect on the ROA of consumer goods firms. The overall effect of all WCM variables are collective statistically significant in explaining about 90% of the changes in firm ROAof the sampled firms. More specifically, the account receivables, inventory and cash conversion efficiency showed positive effect of which account receivable and inventory were statistically significant, whereas account payable and cash conversion cycle were negative and statistically significant. These revealed that account receivable and inventory would lead to improvement in firm ROA and account payables and cash conversion cycle brings about adverse effect on ROA.

WCM and ROE nexus

The result that addressed specific objective two revealed that cumulative effects of WCM variables are statistically significant. This means that WCM is a determinant of ROEof the sampled firms. WCM strategies among the sampled firms drive about 97% of their propensity to improve ROE. By implication, 97% of the sampled firms' performance with relation to ROE can be explained by WCM strategies. This suggests that WCM is critical to the performance of firms. According to the Trade-off theory, free cash flows improve ROE. This aligns with the outcome that WCMoptimality determines about 97% of the propensity for certain direction of firm ROE.

Furthermore, APM, CCC and CCE have positive and significant effects on ROE while ARM, and INVM have negative and significant effects. This signals that sampled firms stands to enhance ROE by employing effective strategies for debt payment and cash conversions of the firm. Delayed debt servicing and advanced payment for orders are effective strategies for boosting firm performance and driving ROE.

WCM Indicators and EPS nexus

The findings on specific objective four based on F-statistics revealed that WCM variables have a statistically significant effect on the EPS of thesampled firms in Nigeria. It has about 78% explanatory effect on EPS which implies that WCM has a huge propensity to driver the level of firms' earnings. The coefficients of regression and the corresponding t-statistics revealed significant positive/direct effects from account receivables, and inventory management. This implies that effective management of account receivables and inventory is a boost to firms' EPS. Other WCM such as APM, CCC and CCE do not have significant effects on EPS. Justifiably, the present study supported the work of Bagh, Nazir, Khan, Khan and Razzaq (2016) that inventory has high adverseeffects on EPS. However, ample of studies such as Madugba&Ogbonnaya (2016) andAkinleye&Adeboboye (2019) showed divergent opinion whereinAPP and ACP have effects on EPS (Madugba&Ogbonnaya, 2016) but ACP and APP had minimal effects on EPS (Akinleye&Adeboboye, 2019).

Conclusion

Consumer goods firms in Nigeria have congruence in the management of working capital such that time and sector similarities have similar influence on the operations of the industry. WCM indicators has a huge explanatory power on performance indicators in the consumer goods firms in Nigeria. Major drivers of WCMare account receivables, account payables, inventory, and cash conversion cycle but have mixed effects on financial performance paramters.

Recommendations

The following recommendations are proffered:

1. The managers of the consumer goods firms should avoid holding unnecessary current liabilities that increase bill payable which are not productive because the unpaid liabilities influencedROAnegatively.
2. The managers of the consumer good firms should employ stock optimization techniques that can determine the right quantities of stock to hold. This will appraise the appropriate amount of inventory level necessary to optimise cost of inventory.
3. Cash conversion efficiency as the measure of actual cash generated from sales within a given time periods has remained insignificant for most of the financial performance indicators.

Contribution to Knowledge

The following are the contributions to knowledge from this study:

1. **Geographical coverage:** This study has made a new discovery to empirical findings for the consumer goods sector since similar existing studies are few yet mixed.
2. **Extension of Period:** The previous studies are relatively staled in time period. The present study has brought the discussion of the subject matter to recency up to 2020.
3. **Modification of models:** The present study employed five distinct models to explain the WCM and FIP Nexus unlike subsequent. Hence, contributed to extant knowledge in this respect. Evidently, the remodel is modelled is stated as:

- $ROA_{it} = \alpha_0 + \beta_1 ARM_{it} + \beta_2 APM_{it} + \beta_3 INVM_{it} + \beta_4 CCC_{it} + \beta_5 CCE_{it} + \beta_6 FS_{it} + \mu_{it}$
- $ROE_{it} = \alpha_0 + \beta_1 ARM_{it} + \beta_2 APM_{it} + \beta_3 INVM_{it} + \beta_4 CCC_{it} + \beta_5 CCE_{it} + \beta_6 SIZE_{it} + \mu_{it}$
- $EPS_{it} = \alpha_0 + \beta_1 ARM_{it} + \beta_2 APM_{it} + \beta_3 INVM_{it} + \beta_4 CCC_{it} + \beta_5 CCE_{it} + \beta_6 FS_{it} + \mu_{it}$

Suggestions for Further Studies

The inability of research to be devoid of limitation coupled with the needs to fill perceived gaps led to the following suggestions which further studies may look at:

1. Similar future studies may be conducted in other sectors apart from the consumer goods sector.
2. There is also need for future studies to include other WCM variables not captured in this study.
3. Subsequent scholars should consider using a more robust methodology like Generalized Methods of Moments than the two panel data variants considered.
4. There is need for subsequent studies to be done in two countries as this could assist academia to understand whether the stage of an economy determines that WCM strategies and their effect on FIP.

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