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AVERAGE PAYMENT PERIOD AND OPERATING CASH FLOW PERFORMANCE OF FIRMS IN NIGERIA

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Abstract
The study examined the effect of cash average payment period on operating cash flow performance of firms in Nigeria for the period 2011-2020. The study adopted the Ex-Post Facto research design. The population of the study included 57 manufacturing firms quoted on the Nigerian exchange group (NXG). Data which was obtained from Nigerian exchange group (NXG). Regression analysis was used in testing the hypothesis of the study. Findings emanating from the study reveal that there is no significant effect of average payment period on operating cash flow performance of the firms in Nigeria. Consequent on the findings, the study therefore recommended that regularly reviewing payment terms, negotiating favourable terms with suppliers, and leveraging financial instruments for payment optimization can contribute to better working capital efficiency.

Key words: Average payment period, Operating cash flow performance and Nigerian firms

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Introduction

Occasionally, diverse studies may harvest contradictory results or interpretations. For this reason, the researcher has a tendency to identify a few research gap as an possibility to reconcile those discrepancies or to further investigate the motives in the back of the inconsistencies. First off, the proxy hole emphasised at the reality that research on cash conversion cycle (CCC) had been conducted substantially globally; with particular emphasis on the CCC components. However, several factors, inclusive of; companies' length, technology and capital, enterprise and liquidity dangers, amongst others diminish the generalizability of such findings (Mutuku, 2011).

Additionally, the bulk of research in the Nigerian context have in particular targeted on profitability, documenting blended findings on the relationship among each (Zakari & Saidu, 2016; Ukaegbu, 2014). The findings can widely be categorised into two: linear nice, said a good sized fine relationship between cash conversion cycle and company profitability of Nigerian listed telecommunication corporations. Ukaegbu (2014) the use of records from four African international locations, Egypt, Kenya, Nigeria and South Africa, confirmed a giant terrible dating between cash conversion cycle and company profitability

Different studies show a non-linear courting between coins conversion cycle and profitability (Oseifuah & Gyekye, 2017). However, the majority of the research centered on proxies obtained from profits statements which may be difficult to competitive accounting regulations by means of managers. This changed into substantiated in a study by means of Kousenidis, Negakis, and Floropoulos (2006) in Greece; which revealed that data from the profits announcement isn't as informative as records from the statement of cash flows. as a result, the literature is scanty on the impact of CCC on cash float data. The declaration of coins flows is frequently considered a true reflection of the inflows and outflows of a firm. the principle impetus for the observe is therefore the effect of CCC on the coins go with the flow of purchaser items manufacturing corporations in Nigeria.

The literature has also not holistically addressed the sector, more specifically following the mandatory adoption of IFRS. Few studies by Aiyegbusi and Akinlo (2016) and Akinyomi (2014), used time periods before the mandatory adoption of IFRS in Nigeria. This study therefore, determines the effect of average payment period on operating cash flow performance of selected manufacturing firms in Nigeria.

Review of related literature

The cash conversion cycle (CCC) of a company can both be superb or terrible. A high quality result suggests the wide variety of days a company must borrow or tie up capital while anticipating payment from a customer. A terrible end result suggests the wide variety of days a agency has obtained coins from sales before it need to pay its providers (Hutchison, Farris, & Anders, 2007). Long run survival of a company may be carried out through efficient control of cash conversion cycle components, which incorporates receivable series period, stock conversion duration and payable deferral duration (Weinraub & Visscher, 1998). A shorter CCC is related to excessive profitability because it improves the performance of the use of the working capital. A short CCC indicates that the enterprise manages and approaches inventory more quick, collects coins from receivables extra fast and slows down cash payments to suppliers (Nobanee, Abdullatif, & AlHajjar, 2011).

The CCC for a manufacturing company can be defined as a function of [days of accounts receivable + days of inventory – days of accounts payable] (Lazaridis & Tryfonidis, 2006; Deloof, 2003). The receivable collection period measures the average number of days from

the sale of goods on credit to collection from account receivables. It is calculated as [(account receivables/sales) *365]. The inventory conversion period contains the time required for the conversion of raw material into finished goods. It is calculated as [(inventory/cost of goods sold *365]. The payable deferral period is the average time needed to purchase goods on credit and final payment for them. It is calculated as [(account payable/cost of goods sold) *365]. Shipe (2015) reported that the benefits of maintaining an optimal cash level can be substantial, such as smoothing the effects of economic turbulence by ensuring the amount of cash is sufficient to withstand hard times.

Research have validated that a brief CCC will increase the company value, profitability, coins go with the flow, and liquidity (Nobanee, Abdullatif, & AlHajjar, 2011; Mathuva, 2010; Raheman & Nasr, 2007); and, a protracted CCC lowers profitability, cash drift, liquidity and concomitantly the firm price (Oseifuah & Gyekye, 2017). Other research record combined findings on the relationship among the CCC and operational overall performance of a firm. Shin and Soenen (1998) determined a strong negative relationship among profitability and internet change cycle. Deloof (2003) in Belgium additionally revealed a bad courting. Raheman and Nasr (2007) in Pakistan found out a terrible dating among profitability and additives of CCC. Others such as Lazaridis and Tryfonidis (2006) in Greece determined a superb courting between CCC and profitability.

Average Payment Period

Purchases on credit score provide upward push to bills payables. According to Hampton and Wagner (1989) “whilst a firm makes a buy on credit score, it incurs an duty to pay for the goods in line with the terms given by way of the seller. Till the cash is paid for the products the responsibility to pay is recorded in debts payables”. Not like credit score from monetary institutions, change credit score does now not depend on formal collateral but on agree with and popularity (Fafchamps, 1997). Lenders are an essential part of powerful coins control and need to be managed carefully to decorate the performance and the cash function of a company.

The primary goal of account payable is to ensure on-time, accurate payments in compliance with internal controls, tax requirements and other regulations. Raheman and Nasr (2007) state that delaying payment of accounts payable to suppliers allows firms to access the quality of bough products and can be inexpensive and flexible source of financing. On the other hand, delaying of such payables can be expensive if a firm is offered a discount for the early payment. There are numerous approaches discussed in the literature that management can consider when managing accounts payable.

The average payment period is calculated by dividing the sum of the opening and ending balance of account payables with two and divide this with the cost of goods sold. The amount is multiplied with the number of days in a year (i.e., 365) (Lantz, 2008).

$$Average\ number\ of\ days\ accounts\ payable = \frac{Average\ accounts\ payable}{Cost\ of\ goods\ sold}\ x\ 365$$

IAS 7 specifies two strategies in the guidance of announcement of cash flows, the direct and indirect strategies. The direct method reviews cash inflows and outflows on a gross foundation and provide a degree for forecasting coins necessities of an entity. It ignores non-coins objects. As a substitute, the indirect method adjusts internet income with non-coins gadgets (depreciation, profit on disposal of non-modern-day assets, etc.) and considers modifications in working capital to reach at net running cash waft (Nwanyanwu, 2015).

Operating Cash Flows

Cash flows from operating sports of an entity display the quantity to which the principal operations of the entity (manufacturing, trade, and rendering of offerings), besides for making an investment and financing activities, can generate cash flows. They generally include transactions in the "regular" operations of the firm. Such cash flows are the most important financing source for maintaining and developing the running functionality of the entity, repaying loans, paying dividends, and making new investments. Examples of coins inflows from running sports of the entity are:

i. Cash receipts from the sale of goods and the rendering of services;
ii. Cash receipts from commissions, royalties and other income;
iii. Cash receipts from prepayments of customers;
iv. Cash receipts from recovery of trade debts;
v. Covered insurance claims;
vi. Cash receipts from sales of held-for-resale non-current assets;
vii. Cash receipts from sales of held for trading purposes securities of other entities (for example, shares, bonds) and other non-current investments;
viii. Dividends received from other entities (if these inflows are classified as an operating activity according to the accounting policies);
ix. Interest received (if these inflows are classified as an operating activity according to the accounting policies).

Investing Cash Flows

Cash flows from making an investment sports show cash amounts spent on acquisition of property, which will generate destiny financial advantages, and cash receipts from disposals of such belongings. Examples of inflows from making an investment sports are: coins receipts from sales of non-cutting-edge property (besides for held-for-resale); cash receipts from compensation of loans made to 1/3 events; coins receipts from transfers of held for buying and selling purposes securities of different entities; dividends acquired from other entities (if these inflows are categorised as an making an investment activity in step with the accounting rules); interest received on originated loans (if these inflows are categorized as an making an investment pastime consistent with the accounting policies); hobby acquired on coins held in financial institutions (if these inflows are categorised as an making an investment hobby consistent with the accounting rules).

Examples of outflows from investing activities are: cash payments to acquire non-current assets (except for held-for-resale assets); cash payments to build, reconstruct or repair non-current tangible assets that are, controlled by the entity and increase in value as a result of work; cash payments upon lending cash to third parties; cash payments to acquire securities.

Financing Cash Flows

Cash flows from financing activities show how the entity has used external financing sources during the reporting period. Examples of inflows from financing activities of the entity are: cash proceeds from issuing all types of shares; cash proceeds from issuing bonds, bills and other debt securities; cash receipts from borrowing (irrespective of maturity) from third parties (including credit institutions).

Examples of outflows from financing activities of the entity are: coins bills to gather very own stocks; dividends paid (if those outflows are classified as a financing interest in keeping with the accounting policies); cash payments to redeem bonds, bills and different debt securities previously issued by the entity; coins payments of amounts borrowed; hobby paid

on loans (if those outflows are classified as a financing activity consistent with the accounting rules); cash payments referring to a finance rent.

Empirical Review

Egbunike and Uyanne (2021) ascertained the impact of CCC additives on running coins waft of consumer goods manufacturing corporations in Nigeria. The population for the look at comprised quoted manufacturing corporations at the Nigerian inventory trade (NSE). The sample size of the take a look at turned into twenty quoted consumer items corporations purposively drawn from all the manufacturing corporations. The established variable changed into proxied as coins drift from operations scaled by using revenue. The records turned into analysed the use of correlation evaluation and panel statistics regression. The sensitivity and robustness check became accomplished the use of sturdy Least Squares. The study results confirmed that inventory turnover period had a negative substantial impact; secondly, common collection length had a non-substantial negative effect. Zakari and Saidu (2016) investigated the impact of cash conversion cycle on company profitability in Nigeria. The pattern comprised 8 ICT corporations indexed on the Nigerian inventory alternate. Secondary data became accrued from 2010 to 2014. More than one linear regression becomes used to examine the information. The study found a huge advantageous courting among cash conversion cycle and corporate profitability. Garba, Ibrahim, and Kassim (2016) investigated the effect of cash conversion cycle on profitability in Nigeria. The sample comprised five conglomerates indexed at the Nigerian stock exchange. They used secondary information amassed from the period 2002 to 2013. The records became analyzed the use of the pooled, random and glued results regression estimates. The consequences confirmed that the cash conversion cycle had no sizable impact on profitability. Öner (2016) investigated the impact of working capital on profitability of firms in Turkey. The sample comprised 110 manufacturing firms listed on Borsa Istanbul for the period of 2005-2014. The study used a panel data methodology. The study found that cash conversion cycle has a significant negative impact on profitability. The results further revealed that average collection period and days of inventory outstanding have a significant negative relationship; and, average payment period has a significant positive relationship with profitability. Oseifuah and Gyekye (2016) investigated the impact of working capital management components on profitability. The sample comprised 75 non-financial firms listed on the Johannesburg Stock Exchange (JSE) from 2003 to 2012. They used panel data methodology to analyse financial data obtained from I-Net Bridge and BF McGregor. Profitability was proxied by return on assets. The study finds a negative relationship between working capital management and corporate profitability; a negative relationship between inventory conversion period and profitability; a negative relationship between accounts receivables conversion period and profitability; but a positive relationship between accounts payable deferral period and profitability. Khan, Ayaz, Waseem, Abbasi, and Ijaz (2016) examined the impact of cash conversion cycle on profitability in Pakistan. The sample comprised 19 cement companies listed on the Karachi Stock Exchange, over a 6-year period, from 2008-2013. The study relied on secondary data. The study finds that gross profit is positively related to accounts receivable, but negatively related to accounts payable and inventory. The regression analysis showed that accounts payable and inventory has a negative impact on gross profit, while, accounts receivable has a positive impact. Too, Kubasu, and Langat (2016) analyzed the effect of working capital management on profitability. The study employed a correlation research design. The sample comprised all firms listed under manufacturing and agricultural sectors listed at the Nairobi Stock Exchange. Secondary data was collected from annual published financial statements for the period 2008-2013. Pearson correlation was used to test the correlation between variables, and multiple regression used to test the effect of individual variables of working capital management practices. The study revealed that there was a significant negative

correlation between payables period, receivable period and inventory period with profitability. Regression results revealed that payable period had the highest coefficient. Nobanee and Haddad (2014) examined the relationship among working capital control and profitability of firms in Japan. The pattern consisted of 2,123 non-economic corporations indexed at the Tokyo stock exchange for the period 1990 to 2004. Profitability changed into proxied as return on funding. They implemented strong regression to check the relationship. The consequences confirmed that the coefficients of receivable series period for all groups, small and carrier businesses were terrible and sizable. Inventory conversion length turned into substantial and negatively related to profitability for all businesses, small, medium, standard industries, carrier, and information technology corporations. In the end, the relationship between the payable deferral duration and profitability turned into advantageous and large for service agencies only. Ukaegbu (2014) examined the relationship between working capital efficiency and corporate profitability in four African countries, Egypt, Kenya, Nigeria and South Africa. Secondary data was obtained from Orbis database for the period 2005–2009. The results showed that there is a strong negative relationship between profitability, proxied as net operating profit, and CCC in firms across different industrialization typologies. Yazdanfar and Öhman (2014) investigated the impact of cash conversion cycle on profitability of Swedish Small and Medium-sized Enterprises (SMEs). They used cross-sectional panel data covering 13,797 SMEs in four industries over the period 2008-2011. The data was analyzed using seemingly unrelated regression (SUR). The study finds that cash conversion cycle significantly affects profitability. Yasir, Majid, and Yousaf (2014) examined the relationship between cash conversion cycle and performance. They used a sample of 16 firms selected from the cement industry of Pakistan, for a six year period from 2007 to 2012. Correlation and regression was used to examine the relationship. The study finds a negative relationship between cash conversion cycle and profitability, measured via return on assets. Salawu and Alao (2014) examined the effect of working capital management on performance of in Nigeria. The sample comprised sixty purposively selected non-financial quoted companies between the periods 2000 to 2009. The study relied on secondary data which were collected from the annual report and accounts. The results showed that average collection period, average payment period, are significant and positively related to profitability; while, inventory turnover in days and cash conversion cycle are significant but negatively related to profitability.

Methodology

The study made use of ex post facto research design. The population of the study consist of manufacturing firms listed on the Nigerian exchange group (NGX) as at 31st December 2022. The sample size of the study comprised all forty-one (41) manufacturing firms in Nigeria. This list is verifiable through the website of Nigerian exchange group. The selected companies are shown in the table below:

The study relied on secondary data; the data was obtained from annual financial reports and accounts of the studied companies. The data was extracted from the Income Statement, Statement of Financial Position and Statement of Cash flows.

Methods of Data Analysis

The hypothesis was tested with panel regression analysis. The choice of this method is premised on the fact that panel data are most suited to the study of the dynamics of adjustment and better able to identify and measure effects that are simply not detectable in pure cross-sections or pure time-series data.

Specification of Model

The following equations were specified for analysis in the study:

Implicit:

NOC = f (APP, Leverage, ROA, SaGr)- - - - -i

Explicit:

$NOC_{(i,t)} = \alpha + APP_{(i,t)} + Leverage + ROA + SaGr + \mu$- - - ii

Decision Rule

The decision rule relates to the sign and significance of the computed *t-statistic* from the regression output. If the p value of the *t-statistic* < *.05* (the chosen alpha level) the null hypothesis is rejected; and, the variable is postulated to have a significant effect. On the other hand, if the p value of the *t-statistic* > *0.05* (the chosen alpha level) the null hypothesis is accepted; and, the variable is postulated to have no significant effect.

Data Analysis

Regression Analysis

Specifically, to assess the cause-effect links between the constructs and also test the stated assumptions, the study used a panel regression analysis with either a fixed or random effect. The "Hausman test and the Breusch and Pagan Lagrangian Multiplier test" otherwise known as LM test for random effects were utilized to confirm the choice between "fixed and random effects regression models".

To control the adverse effect of outliers in our analysis, the study carried out log transformation on the net operating cash flows and total assets to generate noc and size respectively. The regression outcomes gotten from the combined regression analyses are obtainable and discussed in Table 1 below so that at a glance the outcome of all the tests conducted is easily seen. It comprises the results of the OLS regression model and panel data regression with fixed and random effects.

Table 2: Combined regression result

	1	*2*	*3*	***4***
	NOC (Pool OLS)	**NOC (Fixed effect)**	**NOCF (Random effect)**	**NOCF (Random effect with Robust standard error)**
CONS.	-3.890 {0.000}***	-1.685 {0.726}	-4.118 {0.001}***	-1.685 {0.641}
APP	0.001 {0.041}**	-0.001 {0.086} *	0.001 {0.049}**	0.001 {0.091}*
LEV	-0.000 {0.310}	-0.001 {0.410}	0.001 {0.326}	-0.001 {0.000}***
ROA	0.043 {0.000}***	-0.032 {0.001}***	0.040 {0.000}***	0.032 {0.000}***
F-Stat	**21.75 {0.000}*** **	**2.74 {0.009}*** **	**101.36 {0.000}*** **	**14.36 {0.000}*** **
R- Squared	**0.2752**	**0.2446**	**0.2736**	**0.2446**
VIF	**1.10**			
Hausman test		**14.19 {0.048}*** **		
LM test		**5.97 {0.007}*** **		
Heteroskedasticity	**13.20 {0.000}**			

Note1: *bracket {} are p-values: 2: *, **, ***, implies statistical significance levels at 10%, 5% and 1% respectively*

Source: SATA 14.2/Author (2024)

A big F-statistic (F-stat) with a small probability value (p-value) means that H_0 should be rejected, and we would assert that there is a general link between the dependent and

explanatory constructs while a small F-stat, with a big p-value, would indicate that there is no relationship. The decision rule was to reject the H_0 at a significance level of p-value less than 5% (i.e., $p < 0.05$). Consequently, and judging from the records in Table 1, the F-Stat figures form the pooled OLS, fixed effect, random effect and random effect with robust standard error have values of 21.75, 2.74, 101.36 and 14.36 respectively. All have a p-value of 0.0000 which is less than 0.05 suggesting that we reject the H_0 and accept the alternate. This says that our OLS, fixed effect, random effect and random effect with robust standard error generally was statistically significant at a 1% significance level. The regression model is hence reliable and suitable for statistical inference.

Fixed and Random Effect Regression Test

Our study uses panel data from manufacturing firms in Nigeria over the period of interest. The fixed-effects model according to Ajibolade & Sankay (2013) is the primary method for controlling for omitted factors that vary across instances but remain consistent over time when it becomes necessary to analyze panel data. If the p-value is less than 5% (i.e., p-value 0.05), the decision criterion still applies: the H_0 must be rejected. The F-statistic (Wald-statistic) and P-value for fixed and random effect regression in this study, as seen in Table 1 above, propose that both models, as they are statistically significant below 5%, are appropriate for inference. However, it is not possible to use both the fixed and random effects at once.

The Hausman specification test helps to resolve which one to use. Specifically, as seen in Table 1 above, the Hausman test result of 14.19 has a p-value of 0.048 which implies that we fail to reject the H_0 and accept the alternate hypothesis. This initially suggests that the study should use the results of the random effect panel regression as a basis for its conclusions and suggestions. The Breusch and Pagan Lagrangian Multiplier test (for serial correlation), also known as the LM test, is another model that is used to confirm the results of the Hausman specification test. The results of the LM test for random effects indicated that there may be serial correlation in the individual-specific effects, favouring the random effects model, with a value of 5.97 and a p-value of 0.007. Hence, the study therefore adopts the random effect regression technique for validating the hypotheses while the OLS regression is used as additional test.

Test of Hypothesis

H_{01}: There is no significant impact of average payment period on operating cash flow performance of selected manufacturing firms in Nigeria.

The results obtained from the random effect regression model with robust standard error as shown in Table 1 revealed that average payable period in selected manufacturing firms in Nigeria has a coef. of 0.001 and a p-value of 0.091 which is above the significance threshold of 0.05. The result of 0.001 is an indication of a weak insignificant positive relationship between the independent and the dependent variables at 1%, 5% significance level. This implies that an increase in average payable period will lead to a proportionate increase in the NOC of the selected manufacturing firms under study. However, our decision rule is to reject the null hypothesis where the p-value is less than 0.05 (5%). Consequently, since the p-value is 0.091 which is above 0.05, our decision rule suggests that we fail to reject the null hypothesis and conclude that there is no significant impact of average payment period on operating cash flow performance of selected manufacturing firms in Nigeria.

Conclusion

The study, focused on average payment periods and operating cash flow performance of manufacturing firms in Nigeria. This study has provided valuable insights into the intricate relationship between working capital management and financial performance in the Nigerian manufacturing sector.

Following the analysis, the random effect regression model with robust standard error as seen in table 1 above was used in this study for testing the study's hypotheses. An examination of each independent indicator using the random effect regression model with robust standard error provided thus: The study does not support the hypothesis as there is no significant impact of average payment period on operating cash flow performance ($P > 0.05$). The finding align with, and in some cases deviate from, prior empirical studies, reflecting the nuanced nature of this relationship, like Attari and Raza (2012), where a non-significant negative correlation was found between cash conversion cycle and return on assets. Notwithstanding the findings of the cutting-edge take a look at, there are a few other studies that found various effects. This subsidizes to the present research, supplying realistic pointers that can manual economic selection-makers in navigating the complexities of operating capital dynamics inside the Nigerian production context.

No matter the non-vast impact of average fee length on running cash flow performance, manufacturing corporations have to adopt a proactive technique to coping with their debts payable. Often reviewing price phrases, negotiating beneficial terms with suppliers, and leveraging financial instruments for price optimization can contribute to better running capital performance.

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