

## Determinants of Working Capital Management Practice in Selected Nigerian Quoted Firms

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### **Abstract**

*The study investigated determinants of working capital management practice in twenty-one Nigerian consumer and industrial goods firms between 2010 and 2017. Cash conversion cycle served as a proxy of working capital management practice. For the explanatory variables, five firm-specific factors (profitability, firm size, growth, leverage and operating cycle) and three macroeconomic factors (gross domestic product, inflation and interest rates) were adopted. Using Random effects generalised least squares model as estimation technique, result shows that profitability, firm size, leverage and operating cycle are important factors that influence working capital management practice. The study could not however provide empirical evidence in support of macroeconomic variables as important factors that affect working capital management practice in Nigerian companies. It is recommended that corporate managers should take significant interest in profitability, firm size, leverage and operating cycle when planning for working capital investment as these factors have the potentials of enabling firms achieve optimal investment in working capital and eventually improve shareholders' value.*

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Keywords: Aggressive Policy, Cash conversion cycle, Conservative Policy, Determinants, Nigeria, Working capital

## 1. Introduction

Working capital is the difference between current assets (such as accounts receivable, cash and bank balances, short-term investments, advances to purchase raw materials) and current liabilities (such as accounts payable, creditors for outstanding expenses, provision for tax and other provisions within a period of 12 months). In order to ensure uninterrupted production process, every business organization must spend huge sum of money to finance working capital items (Owolabi & Alu, 2012; Knauer & Wohrmann, 2013 and Ahangar & Shah, 2017).

Working capital is also a yardstick for measuring the liquidity position of an entity. Profitability is good for an organization as a profitable entity will be able to pay the providers of funds (ordinary shareholders) dividends and also embark on business expansion. Liquidity is very important because if an organization is illiquid, it will find it difficult to discharge its short-term commitments as they fall due. This will invariably affects the operation of the business leading to loss of sales, contribution, profit and goodwill. This therefore calls for efficient means of balancing liquidity-profitability nexus by corporate finance managers.

Efficient management of working capital from prior studies (see Osundina, 2014; Onaolapo and Kajola, 2015; Konak and Guner, 2016; Ajayi, Abogun and Odediran, 2017; Ahanger and Shah, 2017; Kajola, Olayiwola and Ekpudu, 2018 and Al-Abass, 2018) show its effect on shareholders' value. To effectively manage working capital items will require managers knowing the important factors that determine working capital requirements.

It is however surprising to know that attention of prior researchers on working capital was basically on the effect of working capital management on firm performance (see Owolabi & Alu, 2012; Onodje, 2014; Lyngstadas & Berg, 2016; Korent & Orsag, 2018 and Yunos, Ahmad, Ghapar & Sungi, 2018). Little attention was devoted to identification of factors that influence working capital management in third world countries like Nigeria as very few studies as far as we are aware have been conducted so far. Among the few studies available, the results were mixed and conflicting, perhaps due to different methodology adopted and proxies used to capture working capital management determinants. By using profitability as a working capital determinant as an example, Pourali (2015); Konak and Guner (2016) and Ajayi, *et al.* (2017) used Return on Asset (ROA) as a proxy for measuring profitability and ordinary least squares (OLS) as estimation technique found a negative and significant relationship between profitability and cash conversion cycle. On the other hand, Ahangar and Shah (2017) used Tobin's Q as performance proxy and two-step generalised method of moments (GMM) as estimation technique found the relationship between profitability and cash conversion cycle to be inverted U-shaped.

Furthermore, studies on firm-specific determinants of working capital management are well documented in the extant literature with little or no attention devoted to the study of macroeconomic factors having influence or not on working capital management.

The study aims to add to the existing literature by providing evidence of possible direct or indirect effects of exogenous (external) factors affecting the practice of working capital management in Nigerian industrial and consumer goods firms.

## **2. Review of Literature**

### **2.1 Theoretical Framework**

Investment in working capital involves sourcing for and utilization of funds. The theory that best explains this important function of corporate finance managers and which this study is predicated upon is Pecking order theory, which was propounded by Myers (1984). It argues that an organisation will prioritize the various sources of funds available to it with special attention to the cost of funds. Based on the hierarchy of selection, the organization will first of all utilize the retained earnings (internal source) before opting for external source if the amount generated from the internal source is not enough. The order of selection of external funds, according to the theory, is debt capital and finally equity capital, which the latter is considered as the costliest source of fund.

Regarding investment in working capital items, the theory suggests that funds from internal source is the best option to be used and debt capital should be discouraged (or used minimally) as a result of risk attached to its usage. Thus, high leveraged firm is seen to have lower working capital items. Pecking order theory predicts an inverse association between working capital management practice and leverage.

### **2.2 Empirical Review and Development of Hypotheses**

#### **Profitability and Working Capital Management**

Return on asset (ROA) is an accounting-based measurement of management's efficiency in the application of resources entrusted with them by shareholders. It is the most commonly used proxy of profitability (Makori & Jagongo, 2013; Lyngstadas & Berg, 2016; Konak & Guner, 2016 and Yunos, *et al.* 2018). A firm that is profitable is expected to have lower cash conversion cycle (CCC). This is due to the fact that the firm will enjoy good bargaining power with its suppliers and also operates tight credit collection policy. The results of some studies such as Zakaria and Amin (2013); Onodje (2014); Rezaei and Pourali (2015); Konak and Guner (2016); Konak and Guner (2016); Afrifa and Tingbani (2017) and Ajayi, *et al.* (2017) produced an indirect association between profitability and working capital management practice. However, few studies (such as Garcia-Teruel and Martinez-Solano, 2014 and Ahanga and Shah, 2017) provided evidence that the higher the performance, the greater the amount of working capital to be carried (in many cases bought at favourable terms,

such as at discounts, from suppliers). This indicates that there will be increased inventories that will guaranty continuos production and sales. The increased level of sales is expected to lead to increase in profitability. Akoto, Awwunyo-Vitor and Anfmor (2013); Banos-Caballero, Garcia-Teruel and Martinez-Solano (2014) and Ahanga and Shah (2017) found positive association between profitability and CCC in prior studies. The following null hypothesis is developed:

Ho<sub>1</sub>: Profitability has no significant relationship with working capital management practice.

### **Size and Working Capital Management**

A larger business outfit has the capacity to extend credit facility to its customers, invest more on inventories and enjoy favourable credit line from suppliers of raw materials and other consumables required for smooth production operation than a smaller firm. Furthermore, larger firms have better access to financial markets than smaller firms. A larger firm is therefore expected to hold more working capital items than a smaller firm. Empirically, Akinlo (2012); Decman and Sever (2012) and Elbadry (2018) provided evidence of a positive relationship between firm size and working capital management. However, Naser, Nuseibeh and Al-Hadeya (2013) found an inverse association between the two variables. The following null hypothesis is formulated:

Ho<sub>2</sub>: Firm size has no significant relationship with working capital management practice.

### **Growth and Working Capital Management**

The desire of Management of business organisations is to have sustainable growth in their activities, especially in areas of sales, assets and profitability. To achieve growth will require more investment in the firm's working capital items. Kieschnich, LaPlante and Moussawi (2006); Zariyawati, Taufiq, Annuar, and Sazali (2010); Gill, (2011); Manoori and Muhammad (2012); Asare-Kumi, Darkwah and Chapman-Wardy (2016) found a direct association between firm growth and working capital management practice. However, Appuhami (2008) and Nazir and Afza (2009) provided evidence of an insignificant relationship between growth and working capital. The following null hypothesis is developed:

Ho<sub>3</sub>: Firm growth has no significant relationship with working capital management practice.

### **Leverage and Working Capital Management**

Working capital items require adequate funding as a result of the time lag between purchases of raw materials needed for production were made and when cash is received from sales of the goods. Funds may come from two major sources- internal (retained earnings) and external (equity and debt). Substantial evidence in the literature reveals an inverse association between leverage and investment in working capital.

This is because higher leverage results in greater level of risk and cost of external funds. Hence, high leveraged firms will tend to invest less in working capital. Nakamura and Palombini (2012); Asmawi and Faridah (2012); Wasiuzzaman and Arumugam (2013); Mohamad and Elias (2013) and Elbadry (2018) confirmed a negative association between leverage and working capital management. Manoori and Muhammad (2012) and Naser, *et al.* (2013) found direct association between leverage and working capital management practice. The following null hypothesis is developed:

Ho<sub>4</sub>: Firm leverage has no significant relationship with working capital management practice.

### **Operating Cycle and Working Capital Management**

Operating cycle consists of inventory conversion and receivables conversion periods. A firm with high operating cycle is expected to invest more in working capital items (Nazir & Afza, 2009; Gill, 2011; Akinlo, 2012 and Wasiuzzaman and Arumugam, 2013). If working capital is to be properly managed, then reduction in operating cycle is required. The following null hypothesis is formulated:

Ho<sub>5</sub>: Operating cycle has no significant relationship with working capital management practice.

### **GDP Growth and Working Capital Management**

Economic growth in most countries is measured by gross domestic product (GDP). Activities of various sectors within a country have impact on economic activities and growth. It is expected that when a country is experiencing economic boom, firms will require commitment of more funds to finance and manage working capital items. Hence, expansion in the firm is expected and the reverse is the case when the economy is experiencing recession. A direct association between growth in GDP and working capital management practice was found in the studies of Zariyawati, *et al.*, (2010) and Akinlo (2012), while Manoori and Muhammad (2012) produced negative relationship and Chiou, Cheng and Wu (2006); Appuhami (2008); Nazir and Afza (2009) and Mohamad and Elias (2013) confirmed no relationship. The following null hypothesis is developed:

Ho<sub>6</sub>: Growth in GDP rate has no significant relationship with working capital management practice.

### **Inflation and Working Capital Management**

Inflation is regarded as persistent increase in the consumer price index (CPI). During period of sustained increase in inflation rate more investment will be required in financing working capital items. The reverse is the case during deflationary period. The following null hypothesis is formulated:

Ho<sub>7</sub>: Inflation rate has no significant relationship with working capital management practice.

### **Interest Rate and Working Capital Management**

The annual real interest rate in Nigeria is determined by the Central Bank of Nigeria (CBN). If there is persistent increase in CBN minimum rediscount interest rate, it will have an impact on interest rates of individual deposit money banks. This inevitably will lead to increase in cost of financing working capital items, especially when a firm seeks and obtains credit facility from the financial institution. The reverse is expected when there is a reduction in interest rate. The following null hypothesis is formulated:

H<sub>0</sub>: Interest rate has no significant relationship with working capital management practice.

### **3. Methods**

An ex-post facto research design in form of historical data is utilized to establish the link between the practice of working capital management and its potential determinants in Nigerian companies. Data were obtained from secondary source only. Firm-specific data were gathered from published annual reports while macroeconomic data were derived from the CBN bulletin for various years.

As at 31<sup>st</sup> December, 2018, fifty-one (51) consumer and industrial goods were listed in the Nigerian Stock Exchange (NSE) and these firms constituted the study's population. By adopting purposeful sampling technique, twenty-one (21) firms that have complete dataset required for the study were used as sample of the study. The list of the sample firms is provided in Appendix 1.

Panel data methodology through multiple regression method is utilised to analyse the data. This is because this approach has some advantages over other data analytical techniques. First, it helps to control for unobservable heterogeneity (Hsiao, 2003 and Ahangar & Shah, 2017). Secondly, it gives more information and produces less collinearity among explanatory variables. Lastly, as submitted by Koop and Steel (2001), it helps to model technical efficiency in a better way by allowing to construct complicated models. As panel data contain observation on the same cross-sectional units over several time periods, there are most likely to be cross-sectional effects on each firm or on a set of group of firms (Akinlo, 2012), hence the use of Fixed effects and Random effects generalised least squares models to mitigate this problem.

Working capital management practice is the dependent variable. In financial management literature, cash conversion cycle (CCC) is the most used proxy of working capital management (see Ukaegbu, 2014, Zariyawati, *et al.*, 2017; Ajayi, *et al.*, 2017; Kajola, *et al.*, 2018 and Yunos, *et al.*, 2018) and a standard measure of firm's operation and efficiency. Efficiency in the management of working capital requires efficient management of three components of working capital – average collection period, inventory turnover period and average payment period. All these components are included in CCC.

Working capital can be affected by combination of factors, internal and external. Internal factors are those ones that are specific to individual firms. On the other hand, external factors are those ones beyond the control of firm’s management. After the review of empirical literature, the study employed five firm-specific variables (profitability, firm size, growth, leverage and operating cycle) and three exogenous variables (growth in GDP, inflation and interest rates) as potential factors that are capable of influencing working capital management practice in Nigeria.

**Table 3.1 Measurement of Variables**

Variable	Abbreviation	Measurement
Working capital management practice	CCC	Average collection period (ACP) + Inventory turnover period (ITP) – Average payment period (APP)  Note: ACP = $\frac{\text{Average accounts receivables}}{\text{Turnover}} \times 365$ ITP = $\frac{\text{Average inventory}}{\text{Cost of goods sold}} \times 365$ APP = $\frac{\text{Average accounts payable}}{\text{Purchases}} \times 365$
Return on asset	ROA	$\frac{\text{Profit after tax}}{\text{Total Asset}}$
Firm size	SZ	Log of total asset
Firm growth	GRW	$\frac{\text{Turnover}_t - \text{Turnover}_{t-1}}{\text{Turnover}_{t-1}}$
Leverage	LEV	$\frac{\text{Total debt}}{\text{Total asset}}$
Operating cycle	OCY	ACP + ITP
Economic growth	GGDP	$\frac{\text{GDP}_t - \text{GDP}_{t-1}}{\text{GDP}_{t-1}}$
Inflation rate	INF	$\frac{\text{CPI}_t - \text{CPI}_{t-1}}{\text{CPI}_{t-1}}$
Interest rate	INT	Log of annual interest rate

Source: The Study (2019)

**3.6 Model Specification**

The general model of the study is depicted in equation 1.

$$Y = f(X) \dots\dots\dots (1)$$

Where,

Y is the dependent variable (Working capital management)

X is the explanatory variable (Determinant factor).

The specific or working model for the study is in line with some prior studies such as

Nazir and Afza (2009); Akinlo (2012) and Ahangar and Shah (2017) and is presented in equation 2.

$$\begin{aligned}
 CCC_{it} = & \beta_0 + \beta_1 ROA_{it} + \beta_2 SZ_{it} + \beta_3 GRW_{it} + \beta_4 LEV_{it} + \beta_5 OCY_{it} + \beta_6 GGDP_{it} + \\
 & \beta_7 INF_{it} + \beta_8 INT_{it} + e_{it} \dots \dots \dots (2)
 \end{aligned}$$

Where,

- CCC = Cash conversion cycle
- ROA = Return on asset
- SZ = Size of firm
- GRW = Firm’s growth
- LEV = Leverage
- OCY = Operating cycle
- GGDP = Growth in gross domestic product
- INF = Inflation rate
- INT = Interest rate
- ei<sub>t</sub> = Error term

#### 4. Results

##### 4.1 Descriptive Statistics

Table 4.1 presents the descriptive statistics results. It reveals that the average cash conversion cycle, CCC) of the selected firms is 145 days and this ranges between -250 days (where average accounts payable is greater than the average collection period and inventory turnover period) and about 604 days. Average ROA is 6.8% and this ranges between -19.2% and 37.2%. Average firm size is about ₦6.3 billion (that is, log inverse (9.795) and growth rate of 16.5%. The proportion of debt to total assets (leverage) on the average is 16.1% and it varies from 0% (unleveraged firm) to 69.1% (high leveraged firm). Operating cycle ranges between 30 days and 626 days, with mean value of 202 days. For the macroeconomic variables, growth in gross domestic product (GGDP) is on the average 6.9%, inflation rate, 6.1% and interest rate, 17.2% (that is log inverse 1.237). The variable with the highest variability from the mean is CCC with standard deviation of 137.621 and the one with the least variability is GGDP with standard deviation of 0.028. The Jarque-Bera statistics for all the variables are significant at 1% level, except the variable INF that is significant at 5%. This indicates that all the series are not normally distributed. This cannot pose a serious threat to the results of the regression because of the use of Fixed and Random effects estimation techniques, which have in-built mechanism to resolve this problem.



**Table 4.1: Descriptive Statistics**

Variable	Mean	Minimum	Maximum	Std. Deviation	Skewness	Kurtosis	Jarque-Bera
CCC	145.330	-250.330	603.530	137.621	0.904	1.203	31.469*** (0.000)
ROA	0.068	-0.192	0.372	0.083	0.421	2.074	32.240*** (0.000)
SZ	9.795	8.263	11.333	0.831	0.185	-1.257	11.969*** (0.003)
GRW	0.165	-0.290	1.004	0.197	0.639	1.749	30.579*** (0.000)
LEV	0.161	0.000	0.691	0.165	0.692	-0.585	15.731*** (0.000)
OCY	202.140	30.080	625.860	127.258	1.289	0.753	49.048*** (0.000)
GGDP	0.069	0.007	0.104	0.028	-1.071	0.554	33.961*** (0.000)
INF	0.061	-0.539	1.148	0.475	1.168	0.927	42.778*** (0.000)
INT	1.237	1.190	1.283	0.029	-0.109	-0.947	6.708** (0.035)

\*\*, \*\*\* significant at 5% and 1% level, respectively

Source: Authors' Computation (2019)

Table 4.2 reveals the correlation among the variables. The association between CCC and ROA is negative and significant at 1% level. This indicates that the higher the CCC, the lower the profitability and vice-versa. Firm size has a direct association with CCC at 1 % level. Leverage has an indirect association with CCC at 5% level. The association between operating cycle (OCY) and CCC is positive and significant at 1% level. However, growth opportunities (GRW), growth in gross domestic product (GGDP) and interest rate (INT) have direct association, while inflation rate (INF) has inverse but insignificant association with CCC.

**Table 4.2: Correlation Matrix**

Variabl e	CCC	ROA	SZ	GRW	LEV	OCY	GGDP	INF	INT
CCC	1								
ROA	-.207*** (.007)	1							
SZ	.522*** (.000)	.236*** (.002)	1						
GRW	-.089 (.253)	.258*** (.001)	.185** (.016)	1					
LEV	-.160** (.039)	- .439*** (.000)	.125 (.106)	.033 (.675)	1				
OCY	.896*** (.000)	- .221*** (.004)	- .496*** (.000)	-.113 (.145)	-.162** (.036)	1			
GGDP	-.031 (.692)	.046 (.555)	.029 (.710)	-.018 (.814)	-.037 (.632)	-.060 (.442)	1		
INF	-.040 (.603)	.053 (.499)	.009 (.908)	.071 (.357)	.006 (.934)	-.044 (.569)	.010 (.901)	1	
INT	.052 (.503)	-.140* (.070)	-.086 (.269)	- .152** (.049)	.094 (.227)	.087 (.262)	.233*** (.002)	- .281*** (.000)	1

\*, \*\*, \*\*\* represent significant at 10%, 5% and 1% level, respectively

Source: Authors' Computation (2019)

#### 4.2 Collinearity Test Result

The test for the presence or otherwise of multicollinearity between the independent variables was conducted using Variance Inflation Factor (VIF) and Tolerance Value (TV) approaches. Table 4.3 presents the multicollinearity test result. Gujarati (2003); Rumsey (2007); Gujarati and Porter (2009); Wooldridge (2009) and Chatterjee and Hadi (2012) argue that VIF of any explanatory variable above 10 or TV of less than 0.1, shows presence of multicollinearity problem.

**Table 4.3: Result of Multicollinearity Test**

<b>Variable</b>	<b>VIF</b>	<b>TV</b>
ROA	1.560	.641
SZ	1.402	.713
GRW	1.132	.884
LEV	1.432	.698
OCY	1.417	.706
GGDP	1.082	.924
INF	1.098	.911
INT	1.215	.823
<b>Average</b>	<b>1.292</b>	<b>0.787</b>

Source: Authors' Computation (2019)

As reported in Table 4.3, none of the explanatory variables has VIF greater than 10 or TV less than 0.1. VIF ranges from 1.082 to 1.560 and with average value of 1.292. Likewise, the TV ranges between 0.641 and 0.924 with an average value of 0.787. These results show that there is absence of multicollinearity problem among the model's variables.

**Table 4.4: Regression Results**

<b>Variable</b>	<b>Fixed</b>	<b>effects</b>	<b>Random</b>	<b>effects</b>
	<b>t-stat</b>	<b>prob</b>	<b>t-stat</b>	<b>prob</b>
Constant	-0.859	0.392	0.797	0.427
ROA	-1.736	0.086*	-2.274**	0.024
SZ	1.937	0.057*	2.268**	0.025
GRW	-1.052	0.295	-0.724	0.470
Leverage	-1.393	0.166	-2.312**	0.019
OCY	11.232	0.000***	14.416***	0.000
GGDP	0.154	0.878	0.776	0.439
INF	-0.312	0.755	-0.466	0.642
INT	0.214	0.831	-0.757	0.450
R <sup>2</sup>	0.922		0.623	
Adjusted R <sup>2</sup>	0.907		0.604	
F-stat	58.914***		32.903***	
Prob (F-stat)	0.000		0.000	
Durbin-Watson stat	1.877		1.706	
Hausman Chi-Square	1.789			
Prob (Hausman Chi-Square)	0.892			
Observations	168		168	

\*, \*\*, \*\*\* represent significant at 10%, 5% and 1% level, respectively

Source: Authors' Computation (2019)

### 4.3 Regression Analysis

Table 4.4 shows the regression results. The summary of Hausman (1978) specification

test indicates Chi-square statistic of 1.789 and *prob* value of 0.892 (which is not significant at 5%). This therefore supports the use of Random effects GLS as estimation technique for unbiased inferences.

## 5. Discussion of Findings

Results of Random effects model as seen in Table 4.4 show that adjusted  $R^2$  is 60.4%, F-stat value is 32.903, which is significant at 1% level ( $p = 0.000$ ) and Durbin-Watson value of 1.706 (is within the acceptable threshold). All these results confirmed that the fitness of the model and also free from serial autocorrelation that can affect inferences to be deduced from the regression output.

The relationship between working capital management practice (CCC) and profitability is inverse and significant at 5% level. This shows that profitable firms do enjoy good bargaining power with its suppliers and also operate tight credit collection policy, thereby investing less in working capital. This provided evidence that the selected firms adopted aggressive strategy of working capital management. This result supports findings of Rezaei and Pourali (2015); Konak and Guner (2016); Afrifa and Tingbani (2017); Ajayi, *et al.*, (2017) and Al-Abass (2018). Hence, the null hypothesis 1 is not accepted. Thus, profitability is an important determinant of working capital management practice in Nigerian firms.

Firm size in Table 4.4 has a direct and significant association with CCC at 5% level. This shows that larger firms have the benefits of enjoying favourable credit terms from suppliers and at the same time have easier access to both money and capital markets when sourcing for funds than smaller firms. These benefits translate to larger firms keeping higher working capital items than smaller firms. The outcome supports findings by Akinlo (2012); Decman and Sever (2012) and Elbadry, (2018). Hence, null hypothesis 2 is hereby not accepted. Thus, firm size is an important predictor of working capital management practice in Nigerian firms.

Growth has an indirect relationship with CCC but it is insignificant. Although this outcome supports the findings of Appuhami (2008) and Nazir and Afza (2009) but is contrary to positive relationship derived from the studies conducted by Zariyawati, *et al.*, (2010); Gill, (2011); Salawu and Alao (2014) and Asare-Kumi, *et al.*, (2016). The study therefore fails to reject null hypothesis 3. Hence, firm growth is not an important determinant factor of working capital management practice in Nigerian firms.

In line with the prediction of Pecking order theory, the association between leverage and CCC is indirect and significant at 5% level. High leveraged firms therefore, are expected to invest less in working capital. The finding has the supports of Asmawi and Faridah (2012); Mohamad and Elias (2013); Onaolapo and Kajola (2015) and Elbadry (2018). Null hypothesis 4 is not accepted. Thus, firm leverage is an important variable that influences working capital management practice in Nigerian firms.

Operating cycle has a positive and significant association with CCC at 1% level. It affirms theoretical expectation of firms having high operating cycle investing more in working capital. The outcome supports the findings of Gill (2011) and Wasiuzzaman and Arumugam (2013). The null hypothesis 5 is not accepted. Thus, operating cycle is an important variable that affects working capital management practice in Nigerian firms.

Regarding the macroeconomic variables- economic growth (GGDP), change in inflation rate (INF) and interest rate (INT), individually produced insignificant relationship with CCC. GGDP is positive and insignificantly related to CCC, while both INF and INT have negative and insignificant association with CCC. These results confirmed that macroeconomic variables have no significant influence on working capital management practice in Nigerian firms. These outcomes are supported by the findings of Chiou, *et al.*, (2006), Appuhami (2008); Mohamad and Elias (2013) and Osundina (2014). The study therefore fails to reject null hypotheses 6, 7 and 8.

## 6. Conclusion and Recommendations

The study empirically explored the determinants of working capital management practice in 21 quoted firms in Nigeria over the period, 2010-2017. The outcome of the study indicated that:

- (i) Only firm-specific factors were relevant variables that influenced the practice of working capital management of the companies.
- (ii) Specifically, profitability, firm size, leverage and operating cycle significantly influenced the working capital management practice.
- (iii) None of the three macroeconomic variables (growth in GDP, inflation rate and interest rate) affected working capital management practice.

It is hereby recommended that corporate finance managers and top management should take into consideration profitability, firm size, leverage and operating cycle when planning for investment in working capital items as these factors have potential of influencing investment in working capital and ultimately shareholders' value.

Lastly, efforts should be directed in the future study of this nature by considering longer study time frame, preferably twenty years and above. Also, consideration of other determinant factors and replication of this study in other sectors of the Nigerian economy should be encouraged.

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#### Appendix 1: List of Sample Firms

S/N	Name of firm	Sector
1	Nigerian Breweries Plc	Consumer goods
2	Guinness Nigeria Plc	Consumer goods
3	7up Bottling Company Plc	Consumer goods
4	Nigeria Enamelware Plc	Consumer goods
5	Flour Mills of Nigeria Plc	Consumer goods
6	Vitafoam Nigeria Plc	Consumer goods
7	PZ Cussons Nigeria Plc	Consumer goods
8	University Press Plc	Consumer goods
9	Longman Nigeria Plc	Consumer goods
10	Morison Industries Plc	Consumer goods
11	RT Briscoe Plc	Consumer services
12	Julius Berger Nigeria Plc	Industrials
13	John Holt Plc	Industrials
14	Berger Paints Plc	Industrials
15	CAP Plc	Industrials
16	IPWA Plc	Industrials
17	Lafarge Africa Plc	Industrials
18	Beta Glass Plc	Industrials
19	Avon Crown Caps and Containers Nig Plc	Industrials
20	Nigerian Ropes Plc	Industrials
21	Poly Products (Nigeria) Plc	Industrials

Source: Nigerian Stock Exchange Fact Book (2010-2017)