WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF QUOTED COMPANIES IN NIGERIA AND SOUTH AFRICA

Abdullahi Masud, Ph.D
Department of Business Administration
Ibrahim Badamasi Babangida University Lapai
talk2masud2008@gmail.com; +2348032170149

Usman Baba Aliyu, Ph.D
Department of Accounting
Ibrahim Badamasi Babangida University Lapai
Ubabaali3131@gmail.com; +2348065808572

Abdullahi Babandako Yusuf, Ph.D
Department of Business Administration
Ibrahim Badamasi Babangida University Lapai
Abdulby2@gmail.com

Salihu Ndagi
Department of Accounting
Ibrahim Badamasi Babangida University Lapai
ndagisalihu@gmail.com; +2348036935658

Mohammed Abdullahi Yusuf
Department of Accounting
Ibrahim Badamasi Babangida University Lapai
Abdutmuha77@gmail.com ; +2348069687098

Bawa Shu'uibu A.
Department of Accounting
Ibrahim Badamasi Babangida University Lapai
Abdutmuha77@gmail.com; +2348069687098

Abstract
The study examines the relationship between working capital management and firm's profitability. In this research study, involving Nigeria firms and South Africa firms for effective and efficient comparison. This gives an essential source of information to have a large sample size in the study. However, the previous literature which discovered that there is a severe lacks of literature on WCM and firm's profitability especially in Nigeria and South Africa. The underlying components that influence the profitability have not been comprehensively explored in Nigeria and South Africa. Therefore, the main objective is to examine the effect of WCM and its components on firm's profitability. The study uses 187 samples and panel data of 935 firm year observations derived from the quoted companies on the Nigeria Stock Exchange and Johannesburg Stock Exchange from 2018 to 2022. The data obtained were analysed by means of multiple regression analyses encompassing correlation and panel data regression analyses. Study is underpinned by Agency theory. This study found that the association between WCM variables on firm's profitability have maximum level of investment on how WCM can produce favourable returns to the shareholders of the company. Finally, the study has implications for captains of industries to devise the most effective and efficient means of managing companies in both Nigeria and South Africa.
Keywords: Working capital management, firm profitability, level of investment

Introduction

The economies of emerging countries are less closely tied to the U.S. economy than Western European economies. This suggests the greatest diversification benefits from investing in developing countries, implying a lower all-equity rate for emerging countries projects. This might be counter-intuitive but remember, this does not mean that the total risk for emerging countries projects is lower than the risk for domestic projects. This study argued that the all-equity rate reflects only systematic risk and as emerging economies are the least correlated economies with the U.S. economy, the systematic risk has to be lower.

This statement, however, does not hold under all conditions. It is important to distinguish between projects which serve different markets. This study is talking about an extractive project like an oil production project, the systematic risk of such a project is unlikely to be lower than a similar project in the U.S., because prices are set in the world market. On the other hand, a market driven project, in which the developing countries market is targeted, is likely to have a lower systematic risk than a similar project in the U.S. This leads us to the question against which market portfolio to judge our project beta. As we look only at the investment from a parent point of view, two possible market portfolios can be identified: the U.S.

Market and the world market portfolio. To use the world market portfolio makes only sense, if we assume the world market to be fully integrated. Especially when looking at emerging markets, this assumption might be neglected because of government regulations and other market imperfections. Shapiro (1983). Suggests using the domestic portfolio because of two reasons: (i) higher comparability between domestic and foreign projects. (ii) Still, U.S. investors choose the U.S. market portfolio as the relevant one.

Up to now, we spoke about systematic risk only and we saw that the systematic risk of investments in emerging countries might be lower than for investments in our domestic market. The result, therefore, is a lower all-equity rate for emerging countries projects, leading to a lower discount rate for the capital budgeting process. However, what really matters is the economic and political risk faced by U.S. investors for emerging market projects. The ratio of systematic to unsystematic risk is likely to be significantly lower for emerging market projects than for domestic projects. For example, the Purchasing Power Parity (PPP) and the domestic Fisher effect do very often not hold in emerging countries, leading to economic disequilibrium and considerable currency risk. Levi (1982) suggests the incorporation of currency risk in the all-equity rate whereas Shapiro (1983) neglects this possibility. In order to be consistent, we should neglect Levi's proposal as well, because currency risk can be diversified away and might therefore be an unsystematic risk. Some clarifying points about this issue should be made here. If the expected inflation is incorporated in our $ discount rate, this rate is called the nominal rate (deflating effect) and we have to discount also nominal cash flows (inflated).

When translating the cash flows denominated in the developing economy currency (before discounting!) in our home currency, the nominal forward exchange rates have to be used, which (should) do include expected inflation differentials. If our real $ discount rate is used, the cash flows have to be real (in today's $ prices) as well. The latter would imply to only use today's spot exchange rate for the translation purpose. Anyway, both methods yield the same result. To account for expected PPP deviations, probability based exchange rate forecasts for the project are appropriate, which, as we will see further on, can easily be incorporated when using a risk analysis tool. Therefore, currency risk should not be incorporated in the discount rate. Whereas by now it is clear how to estimate the "raw" components of the cost of capital for emerging countries, the issue of how to incorporate economic and political risk in the capital budgeting process remains to be addressed. These risks are the main obstacles to

investing in emerging countries. However, I will argue that an arbitrary cost of capital adjustment to incorporate these risks should seriously be questioned.

Many countries in Africa were faced with a lot of problems, starting from shallow financial crisis, non-performing loans and deficiency in liquidity, this has shown in the stock markets in Africa. However, about 57% African nations, only 23% nations have stock markets. The few ones were active such as (Botswana, Egypt, Morocco, Tanzania and Kenya); others are moving at the elementary level. In this analysis, the stockholders and other industrialists in the African nations with a good business plan could not have access to available funds. These problems has led to the formation of the London Stock Exchange (LSE) Advisory Group for African nations to manage and control the low liquidity, low financial capacity, and performance problems affecting African businesses (Abiodun et al., 2016).

Firm's profitability in Nigeria and South Africa has not been a significant influence over the benefits that accrue from high performance (Oyakhilome& Felicia, 2018; Eya, 2016; and Khalid,2018)amongst others stated that the proportion of the exceptional relative decreased in performance of a company is best described by the influence of corporative costs ranging from liquidity problems and credits crunch in various banking institutions. However, a report filed by Orjiako ABC (2020) shows that the low performance in companies may led to lack of access to available funds. (Abiodun et al., 2016).

Furthermore, the globalization and the complexity brought about by the dynamics of issues, such as managing short-term assets and liabilities have begun to prevail. A case in the aftermath of the West African Financial Crisis in 2011 exposed firms in African countries in vulnerabilities of managing with insufficient working capital (Usman and Khan, 2017).Many studies on long-term investments and their effects on a companies' financial performance in Nigeria and South Africa.

Especially, in the area of WCM increase the value of their company's capital in African countries both in the practical and theoretical. On the other hand, little attention was paid to short-term financial issues, specifically in WCM. During major global crises, especially those that started occurring in the mid-1990s, many companies worldwide started examining how short-term asset investment and financing policies had to be addressed to avoid the winding up. This turn of events encouraged more studies on liquidity management, which became active and hot research of discussion. Many policymakers, researchers, and financial experts believed that acceptable WCM practices might give remedy or solutions to regulate non-financial companies' problems.

Literature Review

Financial practitioners view WCM policies as relatively easy and straightforward, allowing companies to finance differences between short-term assets and short-term liabilities (Harris, 2005). Because, WCM is highly reversible (Fazzari& Petersen, 1993; Carpenter et al., 1994), companies would be able to adjust their working capital components at short notice. This offers variability in the data provided for working capital ratios. It would certainly help, for more effective and efficient ways in enhancing business processes that would promote Nigeria's and South Africa performance. The urgency factor related to the WCM items such as components of current assets and current liabilities makes WCM policies among the most important decisions financial managers must take serious action to ensure a company's smooth operations.

Accounts Payable Period (APP)

The APP explained the average number of days that a firm is anticipating to pay suppliers their debt whose invoices are already processed but yet to make payment. Most prominent and small companies usually regard the amounts of money outstanding to trade creditors as a

means of short-term credit free. The higher the APP amount, the higher its total amount of cash on its activities (Maeenuddin et al., 2020). The trade-credit period gives rise to a decrease in transaction costs, therefore improving the company's performance as stated by (Vartak et al., 2019) that the APP can improve the company's performance regarding using money to manage financial problems. Garcia-Teruel and Martinez-Solano (2010) argued that the APP is another form of short-term financing; firms use it to finance a certain proportion of their current assets.

Accordingly, as the size of the firm increases, it helps to bring higher performance in APP. As stated earlier by Lampty et al. (2017) that small companies usually depend on trade credits. Mahato and Jagannathan (2016) found a positive relationship between APP and profitability. Amponsah-Kwatiah et al. (2020), Khalid et al. (2018), Boisjoly et al. (2020) and Filbeck, et al. (2016). In contrast, studies of Geo and wang (2017) reported the negative association between APP and profitability (2007); Kabuye et al. (2019); Vartak et al. (2019) and Kayani et al. (2019). The negative relationship between APP and firm performance is that the longer the firm's period to pay its suppliers, the shorter the profitability and that the company would reduce profitability the longer days before the company pays bills to creditors (Deloof, 2003).

Other Current Assets to Total Assets Ratio (OCATAR)

The current assets of any business organization may constitutes items such as debtors and repayments, cash at bank, receivables, cash in hand, stocks, and inventories. The total assets refer to a mixture of both current and fixed assets (items such as furniture, fixtures, fittings, motor vehicles and plants, machinery, etc.). The other current assets to total assets ratio (OCATAR) referred in this study are current assets minus inventory and receivables to total assets ratio. The reason for using this variable is to measure its (other current assets‟) effect on firm performance, as IHP and ARP cover its effect on inventory and receivables respectively Khalid et al. (2018).

By extension, these together, IHP, ARP, and OCATAR measure the influence of all current assets on firm performance. Vartak et al. (2019) asserted that all the individual components of WCM and marketable securities play a vital role in any company's performance. In other words, other current assets to total assets ratio refers to current assets minus inventories divided by total assets.

While the total assets as explained earlier, consists of both the current assets and fixed assets. The OCATAR is considered very vital in this study, in view of the fact that WCM or short-term financial management is concerned primarily with decisions relating to current assets and fixed assets (Prasana, 2000). It is employed to measure the influence of the current assets, other than receivables as it is covered by ARP on the profitability of the firms listed on the Nigerian stock exchange and Johannesburg stock exchange. The current assets to total asset ratio (OCATAR) is used as an independent variable in studies Khalid et. al (2018) as well as Lalit Kumar Joshi (2020) However, when employed in the study involving 150 listed companies on the National Stock Exchange of India, Lalit Kumar Joshi (2020) found a negative significant relationship between OCATAR and Tobin Q which was used to measure market valuation on firm performance.

Inventory Holding Period (IHP)

The IHP represents the maximum amount of stock held by the firm over a period of time. IHP is the time which a company converted its raw materials into finished goods for sale. Stocks comprises of work in progress, finished goods, and raw materials (Simon et al., 2019) describes inventory as the standard largest manufacturing company's common most

considerable assets. The IHP is explained as a period that takes a firm to convert its stocks into sales.

The main objectives for managing inventory is control inventory holding costs without interruption in the production processes (Lampty et al., 2017). The management must maintain an optimum inventory or stock to satisfy customers' demand to prevent unnecessary IHP costs (Afrifa et al., 2015). The effective and efficient management of stocks is to ensure that there is adequate inventories for immediate activities while ordering and carrying costs are put to the possible minimum amount (Brigham &Daves, 2004). IHP assists a manager in controlling the risk of 'stock-outs' and periodic sales, which help to improve customer demand and decrease ordering carrying costs.

The research studies of Singh, Kumar, and Colombage (2017); Mahato et al. (2016); Vartak et al. (2019); (Lampty et al., (2017) and Samiloglu et al. (2016) found a negative relationship between IHP and profitability. But, the studies by Simon et al. (2019); Amponsah-Kwatiah et al. (2020);Zeidan et al. (2017); and. Usman et al. (2017) found a positive relationship between IHP and profitability. The negative coefficient shows that a reduction in the number of days that takes a firm to dispose of inventories decreases profitability Lampty et al. (2017).

Theoretical Review

Agency theory

The agency theory concerns the difficulty in motivating one party (the agent) to act in the best interests of another party (the principal). According to Jensen and Meckling (1976), providers of capital delegate a firm's day-to-day operating decisions and activities to the management of the organization, resulting in an agency relationship between the providers of capital and the management. Through the board of directors, the shareholders of the firm monitor, hire, incentivize and reward the management to act in the best interests of the shareholders. The agency theory sees top managers, as the agents of shareholders, many have their own self-interests and agendas that may be different and separate from those of the shareholders whom they are employed to represent (Fama & Jensen, 1983; Fama, 1980; Jensen & Meckling, 1976). Therefore, agency problems may arise if these two parties have different interests, especially when one of the parties have more information than the other, in a way that one of the parties cannot directly ensure whether the other party is acting in his or her best interests.

Indeed, shareholders may be concerned about the possibility that those agents may choose to enter into a transaction that serves the best interests of the management rather than the shareholders (Jensen & Meckling, 1976). Potentially this deal should have actually been in both parties' best interests and benefits. Several mechanisms like debt financing may be used to align the interests of the management with those of the shareholders' during a financial crisis. This is achieved indirectly through forcing the managers to increase performance, to be able to meet up with the interest and loan repayment before finally satisfying their own interest. Agency theory is, therefore, seen as the deviation from the shareholders best interest by the management. One of the means or tools to minimize the agency problem, debt can be increased in the WCM of the firm (Pinegar & Wilbricht, 1989).

Methodology

Population of the study consists of 187 of nonfinancial companies quoted on the Nigeria stock exchange and Johannesburg stock exchange. The samples of the firms in the study covered a period from 2018 to 2022. The 2022 year was the latest period annual financial report was available for extraction at the time of data collection for the study. The companies were finally selected and formed the samples size of the study. However, the data of the 187 companies was extracted from the various annual financial reports for ten (5) years between

2018 and 2022. In addition, only firms established prior to 2018 were chosen to ensure some form of regularity and normalcy in the variable sets. For a firm to be included in the sample, it should have consistent data for the years 2018-2022 for the estimation of parameters for the panel regressions in this study. Based on the above criteria, the initial number of firms in the sector dropped from 250 firms to 187 firms. For each of the 187 firms (85% of firms in these sectors) whose shares are publicly traded, the required data was collected and computed (where necessary) to obtain the variable values for this study for each of the years 2018-2022.

Research Model

$$TQ_{it}=\beta_o+\beta_1 OCATAR_{it}+\beta_2 IHP_{it}+\beta_3 APP_{it+}\varepsilon_{it} \text{ .....(1)}$$

$$ROA_{it}=\beta_o+\beta_1 OCATAR_{it}+\beta_2 IHP_{it}+\beta_3 APP_{it+}\varepsilon_{it} \text{ .....(2)}$$

Results and Discussion

Table 1: Descriptive Analysis

Countries/Samples	Variables	Mean	SD	Min	Max	Obs
Combine sample						
	Tobin Q	1.22	3.92	65	73.51	935
	ROA	3.17	5.44	19.63	35.71	935
	OCATAR	4.06	7.28	45.34	60.11	935
	IHP	3.74	6.11	12.67	36.45	935
	APP	2.57	4.06	18.74	28.83	935
Nigeria						
	Tobin Q	1.11	3.15	55.00	67.34	95
	ROA	2.57	4.71	52.01	70.93	95
	OCATAR	6.25	9.95	32.23	68.17	95
	IHP	4.45	7.22	3.30	44.15	95
	APP	2.11	5.90	34.88	65.13	95
South Africa						
	Tobin Q	2.51	3.17	65.44	73.75	840
	ROA	5.15	7.63	10.61	23.44	840
	OCATAR	4.20	6.35	30.23	60.67	840
	IHP	3.01	4.74	40.32	71.84	840
	APP	2.10	5.00	10.98	26.12	840

Source: Stata Output

The table above shows the descriptive statistics of this study for the combined sample, Nigeria sample and South African sample. From the table, we find that the mean of firm performance for the combined sample as Tobin Q (TOBIN Q) was 1.22 with a SD of 3.92. However, we find that for the Nigeria sample, the mean of firm performance when proxy by Tobin Q was 1.11 with a SD of 3.15, For South African sample, the results shows that the mean of firm profitability was 2.51 with a SD of 3.17. Comparatively, the results shows that the sample firms in South Africa (2.51) were performing more in terms of market value (Tobin Q) when compared to Nigeria. Furthermore, the results shows that the mean of firm performance when measured in terms of profitability (ROA) was 5.15 for the combined samples with a SD of 7.63. However, the mean of profitability for the Nigeria sample was 2.57 with a SD of 4.71.

While the South African sample had a mean of 5.95 and a SD of 11.76 in terms of profitability. Additionally, the results implies that the sample firms in South Africa (5.95) were more profitable on the average than those in Nigeria (2.65). In the case of independent

variable, the table shows that the mean of other current assets to total assets ratio (OCATAR) was 14.26 for the combined samples with a SD of 14.28. However, specific to the countries, the results show that for the Nigeria samples, other current assets to total assets ratio had a mean of 16.20 with a SD of 13.89. While for South African sample, other current assets to total assets ratio had a mean of 14.50 with a SD of 13.35. Comparatively, the results shows that the sample firms in Nigeria (16.20) were liquid on the average than those in South Africa (14.50).

Furthermore, this study find that the mean of inventory holding period (IHP) was 104 days for the combined samples with a SD of 217 days. Specific to the countries, the study shows that the mean of IHP for the sample firms in Nigeria was 64 days with a standard deviation of 61 days. While the mean of IHP for the sample firms in South Africa was 80 days with a SD of 227 days. The results implies that it took firms in Nigeria (104 days) and South Africa (80). We document that the mean of account payable period (APP) for the combined samples was 271 days with a SD of 2197 days. However, specific to the sample countries, we find that the mean of APP for the Nigeria samples was 129 days with a SD of 132 days. Similarly, we document that the mean of APP for the South Africa samples was 114 days with a SD of 192 days. We opine that payable day was more for the sample firms in Nigeria (129 days) and South Africa (114 days).

Table 2: Correlation Analysis

COUNTRY/ SAMPLE	VARIABLES	Tobin Q	RETA	OCATAR	IHP	APP
Combine	TOBQ	1.00				
Sample	ROA	0.44	1.00			
	OCATAR	-0.01	0.21	1.00		
	IHP	-0.08	-0.13	-0.07	1.00	
	APP	-0.00	-0.17	-0.12	0.18	1.00
Nigeria	TOBQ	1.00				
	ROA	0.36	1.00			
	OCATAR	0.33	0.32	1.00		
	IHP	-0.10	-0.11	-0.21	1.00	
	APP	-0.03	-0.20	-0.09	0.48	1.00
South Africa	TOBIN Q	1.00				
	ROA	-0.54	1.00			
	OCATAR	0.02	0.13	1.00		
	IHP	-0.05	-0.10	0.06	1.00	
	APP	0.05	-0.03	-0.08	0.09	1.00

Source: Stata Output

In the case of the correlation between WCM and company's performance measured in terms of Tobin Q, the analysis shown there is a negative association between Tobin Q and other current assets to total assets ratio (-0.01) for the combined samples. However, we find that there is a positive association between Tobin Q and other current assets to total assets ratio for the Nigerian sample (0.33) and the South African sample (0.02). We find that there is a negative association between Tobin Q and IHP for the combined sample (-0.08), Nigeria sample (-0.10), and the South African sample (-0.05). There is a negative association between APP and Tobin Q for the combined samples (-0.00) and the Nigeria sample (-0.03). However, we find that there is a positive association between Tobin Q and APP for the South African sample (0.05). Similarly, when we proxy firm performance in terms of profitability, the table shows that there is a positive association between ROA and other current assets total assets ratio of the combined sample (0.21), Nigeria sample and South African sample (0.13). There

is a negative association between ROA and inventory holding period of the combined sample (-0.13), Nigeria sample (-0.11) and South African sample (-0.10). There is a negative association between ROA and APP of the combined sample (-0.17), Nigeria sample (-0.20) and South African sample (-0.03).

Country-Specific Regression Analyses

The panel data regression results obtained from the county specific regression analysis is presented and discussed below:

Table 3: Panel Data Regression Results

	Nigeria				**South Africa**			
	Model 1		**Model 2**		**Model 1**		**Model 2**	
	ROA Model (Random Effect)	ROA Model (Random Effect)	TOBQ Model (Fixed Effect)	TOBQ Model (Fixed Effect)	ROAA Model (Random Effect)	ROA Model (Random Effect)	ROA Model (Fixed Effect)	ROA Model (Fixed Effect)
C	-21.28 {0.232}	-10.67 {0.439}	8.99 {0.001} **	10.92 {0.000} ***	5.67 {0.259}	6.84 {0.161}	22.47 {0.000} ***	22.03 {0.000} ***
OCATAR	0.21 {0.047} **		0.00 {0.832}		0.04 {0.082}		-0.00 {0.642}	
IHP	-0.00 {0.859}		0.00 {0.818}		-0.00 {0.701} **		-0.00 {0.732}	
APP	-0.01 {0.535}		0.01 {0.000} ***		-0.00 {0.011} **		0.00 {0.987}	
F/Wald Stat.	28.80 (0.01)	13.07 (0.01)	4.67 (0.01)	7.91 (0.00)	74.57 (0.00)	65.80 (0.00)	6.52 (0.00)	13.23 (0.0)
R-Squared	0.21	0.11	0.17	0.25	0.07	0.06	0.05	0.05
VIF Test	1.46	1.09	1.46	1.09	1.11	1.02	1.11	1.02
Heter. Test	0.03 (0.87)	10.81 (0.01)	58.84 (0.00)	32.97 (0.00)	0.25 (0.62)	0.52 (0.47)	120.65 (0.00)	1.42 (0.23)
Hausman Test	6.89 (0.55)	2.39 (0.66)	55.30 (0.00)	17.26 (0.01)	13.21 (0.11)	9.05 (0.06)	35.14 (0.00)	27.33 (0.00)

Source: Stata Output

Table above represents the results obtained from the country-specific regression of which panel regression estimator after several diagnostic test were carried out to validate the model. From the table, we observed that the mean VIF (OLS regression) across all the models is within the limit value of 10, this shows there is absence of multicollinearity in all the models, and this means no IV's can be drop from the models. In addition, the table above, it could be observed that the OLS results had heteroscedasticity problems in since its probability value was significant at 5%. The presence of heteroscedasticity clearly shows that the sampled firms are not homogeneous. However, this shows that a robust or panel regression approach could be needed to capture the impact of each firm heteroscedasticity on the results. Furthermore, we adopted the panel regression method using both fixed and random effect models. In the table above, the F-statistic and Wald-statistic value for the Specific country samples for fixed and random effect regression respectively shows that the models are valid for drawing inference since they are all statistically significant at 5% or 1%. In the case of the

coefficient of determination (R-squared), it was observed that the IVs models cannot in 100% explain the variance in the DVs. However, the difference have been captured in the error term. In selecting between fixed and random effect panel regression estimation results, the Hausman test was conducted. The test is based on the null hypothesis that the random effect model is preferred to the fixed effect model.

Nigeria Sample

The p-value of the Hausman test (0.55) and (0.66) for model 1 shows that we should accept the null hypothesis and reject the alternative hypothesis at above 5% or 1% level of significance. However, the p-value of the Hausman test (0.00) and (0.01) for model 2 indicates that we should reject the null hypothesis and accept the alternative hypothesis at above 5% or 1% level of significance. The results mean that we should rely on the random effect for the return on assets model and fixed effect for the Tobin Q model of the Nigeria samples.

Empirical evidence from the Nigeria samples from table above reveals that other current assets to total assets ratio [Random effect regression = 0.21 (0.047) for model 1 and Fixed Effect regression = 0.00 (0.832) for model 2] indicates a positive significant effect on firm performance when proxy by ROA and a positive insignificant effect when proxy by Tobin Q. This implies that other current assets total assets ratio significantly improves the profitability dimension of firm performance of the sample firms in Nigeria. In the same vein, we find that IHP [Random effect regression = -0.00 (0.859) for model 1 and Fixed Effect regression = 0.00 (0.818) for model 2] shows a negative insignificant effect on firm performance when proxy by ROA and a positive insignificant effect when proxy by Tobin Q. This implies IHP has no significant effect on firm performance of our sample firms in Nigeria.

Account payable period [Random effect regression = -0.01 (0.535) for model 1 and Fixed Effect regression = 0.01 (0.000) for model 2] show a negative insignificant effect on firm performance when proxy by ROA and a positive significant effect when proxy by Tobin Q. This imply that APP significantly improves the market value dimension of firm performance of our sample firms in Nigeria.

South African Sample

For the South Africa sample, a look at the p-value of the Hausman test (0.11) and (0.06) for model 1 implies that this study should accept the null hypothesis and reject the alternative hypothesis at above 5% or 1% level of significance. However, the p-value of the Hausman test (0.00) and (0.00) for model 2 implies that we should reject the null hypothesis and accept the alternative hypothesis at above 5% or 1% level of significance. The results means that we should rely on the random effect for the return on total assets model and fixed effect for the Tobin Q model of the South Africa samples. Empirical evidence from the South Africa samples from table above reveals that other current assets to total assets ratio [Random effect regression = 0.04 (0.082) for model 1 and Fixed Effect regression = -0.00 (0.642) for model 2] indicates a positive insignificant effect on firm performance when proxy by ROA and a negative insignificant effect when proxy by Tobin Q. This implies that other current assets to total assets ratio insignificantly influences firm performance of the sample firms in South Africa. In the same vein, we find that inventory holding period [Random effect regression = -0.00 (0.701) for model 1 and Fixed Effect regression = -0.00 (0.732) for model 2] shows a negative insignificant effect on firm performance when proxy by ROA and Tobin Q. This implies that IHP has no significant effect on firm performance of the sample firms in South Africa.

Account payable period [Random effect regression = -0.00 (0.011) for model 1 and Fixed Effect regression = 0.00 (0.987) for model 2] indicate a negative significant effect on firm

performance when proxy by ROA and a positive insignificant effect when proxy by Tobin Q. This implies that APP significantly decrease firm profitability dimension of performance of the sample firms in South Africa.

Combined Regression Analyses

The panel data regression results obtained from the combined regression analysis is presented and discussed below.

Table 4: Regression Results (ROA model)

	ROA Model (OLS)	**ROA Model (FE)**	**ROA Model (RE)**	**ROA Model (OLS)**	**ROA Model (FE)**	**ROA Model (RE)**
C	0.17 {0.941}	51.76 {0.000}	5.88 {0.123}	0.40 {0.861}	20.99 {0.025}	2.01 {0.604}
OCATAR	0.14 {0.000}	0.07 {0.008}	0.10 {0.000}			
IHP	-0.00 {0.002}	-0.00 {0.040}	-0.00 {0.006}			
APP	-0.00 {0.016}	-0.00 {0.267}	-0.00 {0.090}			
F/Wald Stat.	17.50	32.80	188.69	13.66	4.04	18.58
R- Squared	0.07	0.13	0.11	0.03	0.01	0.01
VIF Test	1.05			1.04		
Heter. Test	264.90			75.06		
Hausman Test		167.40			16.05	

Table 4: Regression Results (TOBQ model)

	TOBQ Model (Pool OLS)	TOBQ Model (Fixed Effect)	TOBQ Model (Random Effect)	TOBQ Model (Pool OLS)	TOBQ Model (Fixed Effect)	TOBQ Model (Random Effect)
C	2.74 {0.000} ***	19.21 {0.000} ***	9.57 {0.000} ***	13.53 {0.000} ***	187.07 {0.000} ***	16.61 {0.000} ***
OCATAR	-0.00 {0.548}	-0.01 {0.325}	-0.01 {0.296}			
IHP	-0.00 {0.085}	-0.00 {0.806}	-0.00 {0.589}			
APP	7.05 {0.868}	2.97 {0.923}	4.11 {0.893}			
F/Wald Stat.	3.54 (0.01)	9.71 (0.00)	33.89 (0.00)	4.16 (0.01)	50.23 (0.00)	19.46 (0.0)
R-Squared	0.01	0.04	0.04	0.01	0.10	0.05
VIF Test	1.05			1.04		
Heter. Test	619.36 (0.00)			12592.21 (0.00)		
Hausman Test		154.39 (0.00)			178.98 (0.00)	

The above results obtain from the models for the Nigeria and South Africa combined samples in the study. From the table, we observed from the OLS pooled regression that the R-squared

value of 0.07 and 0.03 for model 1 as well as 0.01 and 0.01 for model 2 shows that about 7% and 3% as well as 1% and 1% of the systematic variations in firm performance proxy by return on total assets and Tobin Q in the pooled firms over the period of interest was jointly explained by the IVs. The unexplained part of firm performance can be attributed to exclusion of other IVs that could effect on firm performance but were captured in the error term. The F-statistic value {(model 1: 17.50 and 13.66); model 2: 3.54 and 4.16)} and their associated P-value of 0.00 and P-value of 0.01 shows that the OLS regression of both model on the overall is statistically significant at 1% and 5% level respectively, this means that the regression models are valid and could be used for statistical inference. The table above also shows a mean VIF value {(model 1: 1.05 and 1.04); model 2: 1.05 and 1.04)} is within the benchmark value of 10, this indicates the absence of multicollinearity in all the models, and this means no IVs should be dropped from the models.

In addition, from the table above, it could observe that the OLS results had heteroscedasticity problems in all the models since their probability value is significant at 1%. The presence of heteroscedasticity in models clearly shows that the samples firms were not homogeneous. This therefore means that a robust or panel regression approach will be needed to capture the impact of each firm heteroscedasticity on the results. In this study, we adopted the panel regression method using both fixed and random effect models.

The F-statistic and Wald-statistic value [{model 1: 32.80 (0.00) and 4.04 (0.01)} model 2: 9.71 (0.00) and 50.23 (0.00)] and [{model 1: 188.69 (0.00) and 18.58 (0.01)}; model 2: 33.89 (0.00) and 19.46 (0.00)] for fixed and random effect regression respectively shows that all the models are valid for drawing inference since they are all statistically significant at 1% and 5%.In the case of the coefficient of determination (R-squared), it was observed that 13% and 1% for model 1 of the fixed effect and 11% and 1% for the random effect of model 1 as well as 4% and 10% for model 2 of the fixed effect and 4% and 5% for the random effect of model 2 systematic variations in firm performance proxy by ROA and Tobin Q was explained jointly by the IVs.

Test of Hypotheses

Hypothesis 1: Other Current Assets to Total Assets ratio has a Significant Effect on The Profitability of Listed Firms in Nigeria and South Africa.

The results obtained from the fixed effect regression shows that other current assets to total assets ratio (Fixed effect = 0.07 (0.008)) the IVs to firm performance when proxy with ROA Shows a positive and significant influence on firm performance. However, we find that other current assets total assets ratio (Fixed effect = -0.01 (0.325)) the IVs to firm performance when proxy with Tobin Q indicates a negative and insignificant influence on firm performance. This imply that other current assets to total assets ratio significantly improve firm performance in terms of profitability of listed firms in Nigeria and South Africa. From the foregoing, we reject the null hypotheses and accept the alternate hypotheses. Hence, other current asset ratio has a significant effect on the performance of listed firms in Nigeria and South Africa.

Hypothesis 2: Inventory Holding Period has a Significant Effect on the Profitability of listed firms in Nigeria and South Africa.

The results obtained from the fixed effect regression shows that inventory holding period (Fixed effect = -0.00 (0.040)) the IVs to firm performance when proxy with ROA show a negative and significant influence on firm performance. However, we find that inventory holding period (Fixed effect = -0.00 (0.806)) the IV to firm performance when proxy with Tobin Q indicates a negative and insignificant influence on firm performance. This imply that inventory holding period significantly reduces firm performance in terms of profitability of

listed firms in Nigeria and South Africa. From the foregoing, we reject the null hypotheses and accept the alternate hypotheses. Hence, inventory holding period has a significant effect on the performance of listed firms Nigeria South Africa.

Hypothesis 3: Account Payable period has no significant effect on the profitability of listed firms in Nigeria and South Africa.

The results obtained from the fixed effect regression shows that account payable period (Fixed effect = -0.00 (0.267)) the IVs to firm performance when proxy with ROA shows a negative and insignificant influence on firm performance. We also find that account payable period (Fixed effect = 2.97 (0.923)) the IVs to firm performance when proxy with Tobin Q indicates positive and insignificant influence on firm performance. This implies that payable management insignificantly influences firm performance in terms of profitability of listed firms in Nigeria and South Africa. From the foregoing, we accept the null hypotheses and reject the alternate hypotheses. Hence, account payable period has no significant effect on the performance of listed firms in Nigeria and South Africa.

Findings of Study

1. Other current assets to total assets ratio (Fixed effect = 0.07 (0.008)) the IVs to firm performance when proxy with ROA have a positive and significant influence on firm performance. However, we find that other current assets to total assets ratio (Fixed effect = -0.01 (0.325)) the IVs to firm performance when proxy with Tobin Q shows a negative and insignificant influence on firm performance.
2. Iinventory holding period (Fixed effect = -0.00 (0.040)) the IVs to firm performance when proxy with ROA indicates a negative and significant influence on firm performance. However, we find that inventory holding period (Fixed effect = -0.00 (0.806)) the IVs to firm performance when proxy with Tobin Q shows a negative and insignificant influence on firm performance.
3. Account payable period (Fixed effect = -0.00 (0.267)) the IVs to firm performance when proxy with ROA indicates a negative and insignificant influence on firm performance. We also find that account payable period (Fixed effect = 2.97 (0.923)) the IVs to firm performance when proxy with Tobin Q shows a positive and insignificant influence on firm performance.

Conclusion

Although most of the research studies have explored the association between WCM variables and a company's performance, most of the focus was on narrow versions of financial performance using performance measures such as earning per share (EPS) and other profitability ratios such as Net profit Margin (NPM). The tests performed have strengthened empirical support for the premise that WCM variables do significantly affect financial performance of a variety of WCM policies is documented using the fixed effects method. If financial performance is to be improved by using a short term asset investment policy as measured by the other current assets to total assets ratio (OCATAR), the result advocates the use of a conservative short-term asset policy. Liberal use of current assets may hamper a firm's profitability but can improve its overall financial performance as it reduces the effects of facing liquidity issues. This paper provides empirical support that the liberal use of Account payable period (a more aggressive short-term asset financing policy) is detrimental to a firm's financial performance.

The study also contributes methodologically to the literature on WCM. This is because of the uniqueness of the methods applied in this study such as quantitative approaches to evaluate the objectives of this study. The quantitative method was dominantly used for the analysis.

However, the study used a panel data and STATA software. The study further minimizes the possibility of spurious and misleading results yielding by controlling and correcting for the presence of multicollinearity, heteroskedasticity and autocorrelation using the VCE robust cluster estimation technique (Baunm, 2006). This is a sensitive area that most research and researchers have ignored as it has the tendency of hindering the findings from being generalized. In summary, this research contributes significantly to existing methodology of WCM.

Recommendation

Based on the findings, the companies in Nigeria and South Africa were recommended to improve their profitability. However, Nigerian and South Africa companies are highly depending on equity financing in order to support their activities. Most companies preferred debt then equity. Therefore, agency problems may arise if these two parties have different interests, especially when one of the parties have more information than the other, in a way that one of the parties cannot directly ensure whether the other party is acting in his or her best interests.

Indeed, shareholders may be concerned about the possibility that those agents may choose to enter into a transaction that serves the best interests of the management rather than the shareholders (Jensen & Meckling, 1976). Potentially this deal should have actually been in both parties' best interests and benefits. Several mechanisms like debt financing may be used to align the interests of the management with those of the shareholders' during a financial crisis.

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