

The Effect of Working Capital Management on Firm's Profitability (A Case of Tanzania)

Wakara Ibrahimu Nyabakora

Department of Local Government Accounting and Finance
Local Government Training Institute (LGTI), P. O. Box 1125, Dodoma, Tanzania

Abstract

Background: Working capital management decision is one of the most fundamental decisions for any business and so, it needs delicate attention in dealing with, regardless of its nature, size, type or ownership. The effect of working capital management cannot be neglected during firm financing due to its influence on firm profitability and liquidity. Due to the fact that, current assets take a big part of the assets, working capital management becomes very crucial and so need to be considered with caution. This paper study the effects of working capital management on Tanzanian listed non financial firms' profitability while controlled by the firm size, debt ratio, and firms' liquidity.

Material and Methods: We employed secondary data from Companies listed in Dar es salaam stock exchange, from the year 2005 to 2018. Panel data regressions and correlation were employed in the analysis.

Results: The results found a negative effect of working capital management proxies for Inventory Turnover in Days, Average Receivables Collection Period, Average payables payment period, on firm's profitability measured by Return on Assets. However, the results found a positive effect of Cash Conversion Cycle to firms' profitability.

Key words: Working Capital Management, Profitability, Tanzania, Firms

Date of Submission: 16-05-2020

Date of Acceptance: 31-05-2020

I. Introduction

Working capital management decision is one of the most fundamental decisions for any business and so, it needs delicate attention in dealing with, regardless of its nature, size, type or ownership (Korent & Orsag, 2018; Dinku, 2013). The effect of working capital management cannot be neglected during firm financing due to its influence on firm profitability and liquidity (Aktas, Croci, & Petmezas, 2018). Due to the fact that, current assets take a big part of the assets, working capital management becomes very crucial and so need to be considered with caution (Ponsian, Chrispina, Tago, & Mkiibi, 2014; Arunkunar & Ramanan, 2013).

The firm should have an efficient working capital management policy as a strategy to reach the shareholders' profit maximizing goal (Ray, 2012). Also, as stated by Eljelly 2004 and Napompech, 2012, the firm needs to take control measures on working capital requirement such that, neither have excessive current assets (that could be invested in viable long term assets) nor to have inadequate current assets (which may hinder the firm to meet its short term obligation and fail also to benefit from the best paying opportunities). Having excessive current assets will cause unnecessary holding and inventory handling costs (Ponsian, Chrispina, Tago, & Mkiibi, 2014; Arnold, 2008). However, inadequate investment in inventories, trade receivables, or cash cause the challenges for the firm in meeting its operation costs and that reduce the sales and profit level in the long run (Deloof, 2003; Erasmus, 2010).

Maintaining the trade-off between liquidity and profitability is the move to profit maximization (Ani, Okwo, & Ugwunta, 2012). Survival of the firm is influenced with effective working capital management policy that leave the firm continue with the operation and solvency (Evcı & Şak, 2018). From this point of view, our study aims on assessing the impact of working capital management on firms' profitability.

Elements of working capital that affect the firms' profitability as used in the previous literature have been used as proxies for working capital management in this study. Also, the variables chosen are based on empirical literatures' results used in the previous studies.

Therefore, the eight proxies used in this study are; inventory turnover in days, Average Receivables collection period, average payables payment period, cash conversion cycle, firm size, Debt Ratio, current ratio and return on assets.

Operating cycle is the time required to complete the following sequential stages in a manufacturing organization;

Stage I

Conversion of cash into raw materials – when the firm uses cash to buy raw materials

Stage II

Conversion of raw materials to work-in-progress –when labor and machines work on processing raw materials

Stage III

Conversion of work-in-progress to finished goods – Assembling and finishing works

Stage IV

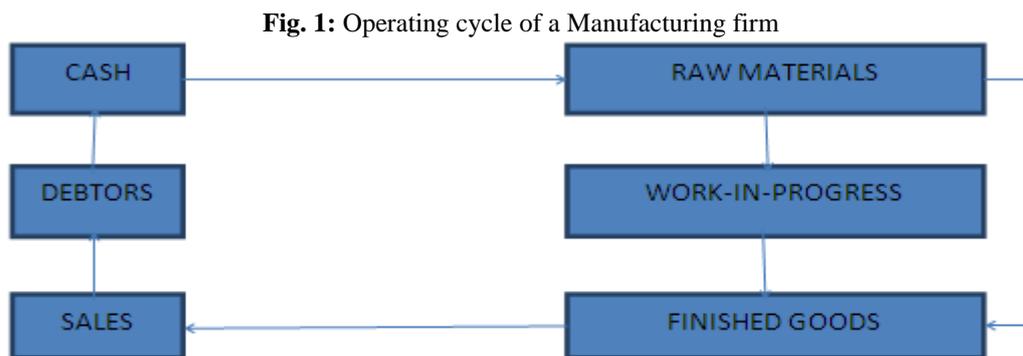
Conversion of finished goods into debtors through sales – When the goods are set for credit sales.

Stage V

Conversion of debtors into cash – When the firm collects cash and cash equivalent from buyers.

Pandey (1979);

The diagrammatic illustration of the operating cycle is shown in Fig. 1



Source: Pandey (1979), *Financial Management*

The study is important due to the fact that, many of the prior studies were done for developed and emerging economies. Not only that, but also in Tanzania there is no study on the effects of working capital management on firms' profitability was done, though Tanzania is among the top most five countries in sub Sahara African countries and in the world having the fastest growing economy with an average GDP growth of 7% for more than ten years (Nyabakora et al. 2018; and World Bank report 2017). Nevertheless, due to the infancy of the capital market in the area under study, many firms finance their investment using bank loans (Nyabakora et al. 2018) which is short term in nature.

Apart from the contribution to the existing literature, the finding of this research work will contribute to help managers and other policymakers in the resource allocation due to the fact that, resources are scarce. Also, it helps to provide the knowledge on the effects of working capital management on firms' profitability in developing economies.

The following section is the literature review followed by research methodology, description of data collection, discussion of results and findings, and finally the conclusion.

II. Literature Review

Having characteristics of not altered by firms' capital structure, Return on Assets is said to be a good profitability measure (Barber & Lyon, 1996).

Many studies have been conducted on the relationship between the cash conversion cycle and corporate performance, and most of them proved a negative relationship (e.g. Deloof (2003) and Enqvist et al. (2013)). If the result is true, the firm should minimise the cash conversion cycle, the same as keeping the three proxies in the optimal level. It is true that, account payables can be regarded as one of the source of finance for the firm. When the firm delay to pay for creditors, it will affect the cash conversion cycle in a positive way due to the fact that, the act would increase the payables' cycle, that at the same time would reduce the cash conversion cycle which ends on the efficient working capital.

However, excess stock and longer account receivables' cycle would enlarge the cash conversion cycle that will end up making the working capital inefficient.

Researchers Deloof (2003) and Enqvist et al. (2013) reports that, the company *Size* (Logarithm of Sales), *Debt Ratio* (Total debt/Total Assets) and *Current ratio* (Current Asset/Current Liabilities) were included as controlling variables due to the fact that, it is likely they can affect the relationship between working capital management and firms' profitability. However, controlling variables were to control the situation.

Apart from that, many studies have conducted to assess the relationship between firms' working capital management proxies and firms' profitability, the results of which were divergent. One thing reported in common is, working capital management have crucial influence on the corporate returns. Shin and Soenen (1998), Lazaridis and Tryfonidis (2006), Raheman and Nasr (2007), among many previous researchers, measured working capital using cash conversion cycle, inventory conversion period, receivables' collection period and payables' payment period. The researchers proved that, the greater the investment in working capital (the longer cash conversion cycle) the lower is the firm's profitability (Nazir & Afza, 2009; Banos-Caballero et al, 2010).

Nevertheless, Sharma, A. and Kumar, S. (2011) evaluated 263 firms listed on Bombay Stock Exchange in India between the year 2000 and 2008, using the panel data method and found that, number of days accounts receivables and cash conversion cycle have a positive impact on firm profitability. The results was challenged by Pais and Gama (2015) when conducted the study on the same topic for 6063 SMEs in Portugal between the period 2002 and 2009; employing Panel data regression, found that, working capital management had the negative impact on the firms' profitability.

However, Ponsian and Chrispin (2014) testing three manufacturing firms listed on Dar es salaam Stock Exchange for the period 2002 – 2012, using Pearson's correlation and regression analysis; they found the strong positive correlation between cash conversion cycle and firm profitability, and the strong negative correlation between average payment period, average debtors collection period, inventory turnover in days, liquidity, and firm profitability. Otherwise, Alipour (2011) examines the empirical impact of working capital management on firms' profitability of 1068 firms in Iran. The study found that, number of days accounts receivable, inventory turnover in days, number of days accounts payables, cash conversion cycle (proxies for working capital management) have significant negative empirical impact on firms' profitability.

Furthermore, Deloof (2003) examines the relationship between working capital management and firms profitability of 1,009 listed non-financial firms in Belgium from 1992 to 1996; using Pearson correlation and regression tests. The result shows that, working capital management had negative relation with firms' profitability. However, in evaluating the relationship between liquidity level of the firm and firms' profitability, Eljelly (2004) studied a sample of 29 listed Saudi Arabian companies from the year 1996 to 2000; using the Pearson Correlation and regression analysis. The results establish the significant negative relation between firms' liquidity level and firms' profitability.

Similarly, Aregbeyen (2013) conducted a study on the influence of working capital management on the firms' profitability of 48 companies listed on the Nigerian Stock Exchange for the period 1993 – 2005; using the Pearson Correlation analysis and regression analysis methods. The results found that, working capital management had the negative influence on firms' profitability. Nevertheless, Ponsian, Chrispina, Tago and Mkiibi (2014) conducted the study on the influence of working capital management on firms' profitability of 3 manufacturing firms listed on the Dares Salaam Stock Exchange (Tanzania) for the period 2002-2013; using the ordinary least square regression analysis method. The study found that, average payment period, and cash conversion cycle had positive influence with firms' profitability, while inventory turnover in days, and average debtors collection period had a highly significant negative influence with firms' profitability.

Akoto, Awunyo-Vito and Angmor (2013), Ponsian, Chrispina, Tago and Mkiibi (2014), and Sharma and Kumar, (2011) also in their study on the relationship between working capital management and firms' profitability in different economies, adopting the Ordinary Least square regression analysis method, they found the positive relationship between firm size, current asset ratio and cash conversion cycle with firms' profitability. However, Kodithuwakku (2015), conducted a study on the effect of working capital management on firms' profitability of sampled 20 manufacturing firms listed on the Colombo Stock Exchange, Sri Lanka for the period 2008 - 2012 adopting the Pearson correlation and ordinary least square regression methods. The study revealed that, receivables collection period, inventory conversion period and cash conversion cycle had a negative effect on firms' profitability.

In addition to the above, Afrifa and Tingbani (2017), Gachira, Chiwanzwa, Nkomo and Chikore (2014), examining the correlation between working capital management and firms' profitability of different economies in different periods, adopting correlation and regression analysis techniques and found the positive correlation between the inventory, cash conversion cycle and account receivables, and firm's profitability; While in the same study, Ray (2012), Sharma, A. and Kumar, S. (2011), Samiloglu & Demirgunes, K. (2008), using the same analysis method but in different economies found negative effect between cash conversion cycle and firms' profitability. These divergent views are the reasons of this study that needs to prove the findings in the specific area under study's economy.

In summary, previous empirical literature on impact of working capital management on firms' profitability reveals that, working capital management has an impact on the firms' profitability, although there are divergent views regarding the variables' proxies for working capital management and firms' profitability results. In line with the subject matter literature, our study tests the hypothesis of the impact of working capital management proxies on firms' profitability of non financial firms listed on the Dar es Salaam Stock Exchange, Tanzania for

the period 2005 - 2018. Findings of majority of studies revealed the prevailing of both negative and positive relationship between working capital management and firms' profitability, depending on the study area and the economic status of the region under study. Based on this discussion we provide the following hypothesis:

- H₁:** There is a negative relationship between ACP and firm Profitability (ROA)
- H₂:** There is a negative relationship between ITID and firm Profitability (ROA)
- H₃:** There is a positive relationship between APP and firm Profitability (ROA)
- H₄:** There is negative relationship between CCC and firm Profitability (ROA).

III. Material and Methods

Data Source

The study uses secondary data collected from Dar es salaam Stock Exchange listed firms' published financial statements. Selection of sample considers sector wise data availability such as air aviation, construction and allied, manufacturing, Energy and petroleum, and commercial and services.

Population and Sample

The study population consists of 27 firms listed on the Dar es Salaam Stock Exchange in Tanzania for the period 2005 to 2018. The study sample consists of only eight non financial firms listed on Dar es Salaam Stock Exchange, having published financial statements for fourteen years concurrently. This is the reason filtered firms from 27 to only 8 sampled firms. However, (Moser and Kalton 1971: 118) assert that, "...one must accept the limitations faced by the researcher due to shortage of resources and tries to utilize the available sample to the best advantage...." Table 1 below shows the sampling process.

Table 1: Shows the Sample Selection Process

| Criteria | No. of Firms |
|--|--------------|
| Total Listed Firms as at 20 th March, 2020 | 27 |
| Less: Financial Firms | 9 |
| Total Non Financial Listed Firms | 18 |
| Less: Mining Firms | 1 |
| Total Non Financial Listed Firms | 17 |
| Less: New listed / Delisted firms during the research period | 9 |
| Total number of Non Financial Listed Firms available Sample | 8 |

Source: Researchers, 2020

Validity and Reliability of Data

Data for this study is collected from the Dar es salaam Stock Exchange listed firms' profiles where it is legal bonded that, all registered companies have to submit the audited and published financial reports as required by the Tanzania Company Act. Cap. 2002. With this requirements make the provision of real and reliable information with full disclosure.

The study Model

$$ROA = \beta_0 + \beta_1(ACP) + \beta_2(APP) + \beta_3(ITID) + \beta_4(CCC) + \beta_5(SIZE) + \beta_6(CR) + \beta_7(DR) + \epsilon_{it}$$

Control Variables

Liquidity (CR)

Liquid firms have more profit compared to illiquid firms, so (current ratio) liquidity proxy is used as the controlling variable proxy to neutralize the effect of profitability.

Size of Firm (LOS)

Generally, firms with high sales volume, is more profitable compared to that have low sales volume. In this case, the firm size is used as our controlling variable to neutralize the effect. The firm size formula is natural logarithm of sales.

Table 2: Description of the Variables Under Study

| Variables | Description |
|--|---|
| ROA _{it} | It measures how efficiency the firm uses its assets. Since it is the best measure for the firms adopting the profit maximization goal, it is a good measure for profitability of firm i in year t. $ROA = \frac{\text{Profit Before Tax}}{\text{Total Assets}}$ |
| Inventory Turnover In Days (ITID _{it}) | Shows the length of time the firm take to convert inventory to sales of firm i in year t $ITID = \frac{\text{Inventory}}{\text{Cost of Sales}} \times 365 \text{ Days}$ |
| Average Receivables Collection Period (ACP _{it}) | This shows the length of time the firm takes to collect cash from its debtors of firm i in year t $ACP = \frac{\text{Receivables}}{\text{Sales}} \times 365 \text{ Days}$ |
| Average Payables payment Period (APP _{it}) | Shows the length of time the firm takes to pay its payables of firm i in year t. $APP = \frac{\text{Payables}}{\text{Cost of Sales}} \times 365 \text{ Days}$ |
| Cash Conversion Cycle (CCC _{it}) | Shows the length of time between when the payment for raw material is done and when cash is received for the finished goods sold of firm i in year t. $CCC = \frac{(\text{Receivables} + \text{Inventory}) - \text{Payables}}{\text{Sales}} \times 365 \text{ Days}$ |
| Firm Size | It is measured by the logarithm of Sales of firm i in year t - Akoto, Awunyo-Vito and Angmor (2013) |
| Current Ratio (CR _{it}) | It measures the ability of the firm to settle its short term obligations of firm i in year t. $\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$ |
| Capital Structure (DR _{it}) | It measures the firm's leverage of firm i in year t $\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$ |
| S | Sales |
| β | The change coefficient for independent variables |
| β ₀ | The intercept of the equation |
| ε | Error terms |
| i | Number of Firms |
| t | Time Period |

Source: Researchers, 2020

Data Analysis Instrument

This study employed Descriptive Statistics, Correlation and Regression Analysis. In data analysis, the multiple regressions model is used while using panel data in estimating the coefficient of independent variables as the empirical studies by Ponsian & Afrifa and Tingbani (2017), Chrispin (2014), Aregbeyen (2013), Ponsian & Chrispin (2014), Ponsian, Chrispin, Tago and Mkiibi (2014), Gachira, Chiwanzwa, Nkomo and Chikore (2014), assert. We run the White test for heteroskedasticity due to the fact that, our study is on panel data study which includes cross sectional behavior as shown in table 3 below.

White Test for Ho: homoskedasticity

Against Ha: Unrestricted heteroskedasticity

Table 3: Cameron and Trivedi's Decomposition of IM-test on ROA

| Source | Chi ² | df | p |
|--------------------|------------------|----|--------|
| Heteroskedasticity | 76.20 | 33 | 0.0000 |
| Skewness | 23.04 | 7 | 0.0017 |
| Kurtosis | 0.79 | 1 | 0.3756 |
| Total | 100.03 | 41 | 0.0000 |

Source: Researchers, 2020

Diagnostic Tests

The tests involve Durbin Watson test, normality test, and heteroskedasticity test. We will see the Durbin Watson test due to the fact that, the other two tests have been shown in table 3 above.

Durbin Watson Test

Regression analysis assumes the observations to be independent. Successive observations have to be similar whenever observation are made overtime. The study employed the Durbin Watson test to test the presence of autocorrelation. To control the autocorrelation, robust standard error was adopted.

| variable | Durbin Watson test |
|----------|--------------------|
| ROA | 1.198217 |

IV. Results

Descriptive Statistics Analysis

Descriptive statistic is the statistic which expresses or presents data in descriptive manner. In this study descriptive statistics consist of two variables that are independent variables (Cash Conversion Cycle (CCC), Average Payables Period (APP), Inventory Turnover In Days (ITID) and Average Receivables Collection Period (ACP) and dependent variable Return On Assets (ROA).

It is evident that there is a wide variation between the variables across the firm's during the period of 2005 to 2018. The ROA maximum and minimum values are 0.692599 and negative value of 0.2934342. While analyzing the working capital management variables, it is clear that different Tanzania firms have employed different working capital management strategies for the period 2005 to 2018. The highest variation was seen in Average Conversion Period where the maximum value is 878.3808 and minimum value is 0.1680775 with mean score being 51.42871. This can be seen in the table 4 below;

Table 4: Descriptive Statistics Analysis

| Variable | Observation | Mean | Std Deviation | Min | Max |
|----------|-------------|-----------|---------------|------------|----------|
| ROA | 112 | 0.2250498 | 0.2263724 | -0.2934342 | 0.692599 |
| CCC | 112 | -17.26602 | 104.8412 | -571.451 | 517.9861 |
| APP | 112 | 1.56e+07 | 5.28e+07 | 2.332881 | 2.91e+08 |
| ITID | 112 | 1.13e+07 | 3.80e+08 | 2.639787 | 1.87e+09 |
| ACP | 112 | 51.42871 | 94.36176 | 0.1680775 | 878.3808 |

Source: Researcher, 2020

Correlation Analysis

The relationship between the dependent variables and independent variables is measured by the Pearson correlation for variables used in the regression model. Pearson's correlation analysis is used to find the relationship between working capital management and firm's profitability.

The relationship between the dependent variable and independent variables shown in the table 5 below, describe that some of the independent variables Inventory Turnover In Days and Average Receivables Collection Period with their hypothesis H_{1,2} are accepted due to the fact that, the variables have the negative effect on firms' profitability. The result is supporting the empirical finding by Ponsian & Chrispin (2014), Alipour (2011), Aregbeyen (2013). However, the hypothesis H₃₋₄ are rejected due to the fact that, cash conversion cycle has positive effect on firms' profitability, as per Ponsian & Chrispin (2014), Afrifa and Tingbani (2017); while we reject H₃ due to the fact that, Average Payable Payment period have negative effect on firms' profitability. Our control variables (debt ratio, firm's size) have significant negative effect on firms' profitability, while Current Ratio has significant positive relation with firms' profitability.

Table 5: Correlation Results

| | ROA | CCC | APP | ITID | ACP | DR | SIZE | CR |
|------|---------|-----|-----|------|-----|----|------|----|
| ROA | 1 | | | | | | | |
| CCC | 0.4819* | 1 | | | | | | |
| APP | 0 | 0 | 1 | | | | | |
| ITID | | | | 1 | | | | |
| ACP | | | | | 1 | | | |
| DR | | | | | | 1 | | |
| SIZE | | | | | | | 1 | |
| CR | | | | | | | | 1 |

| | | | | | | | | |
|------|----------|----------|---------|---------|---------|----------|---------|---|
| APP | -0.3561* | -0.0357 | 1 | | | | | |
| | 0.0001 | 0.7088 | 0 | | | | | |
| ITID | -0.3692* | -0.2064* | 0.6793* | 1 | | | | |
| | 0.0001 | 0.029 | 0 | 0 | | | | |
| ACP | -0.1589 | 0.3414* | 0.4578* | -0.1298 | 1 | | | |
| | 0.0942 | 0.0002 | 0 | 0.1724 | 0 | | | |
| DR | -0.6538* | -0.5939* | 0.3142* | 0.3225* | 0.1844 | 1 | | |
| | 0 | 0 | 0.0007 | 0.0005 | 0.0516 | 0 | | |
| SIZE | -0.2327* | 0.1 | 0.0885 | 0.1722 | -0.1304 | -0.1627 | 1 | |
| | 0.0135 | 0.2943 | 0.3536 | 0.0695 | 0.1707 | 0.0865 | 0 | |
| CR | 0.5949* | 0.5762* | -0.0701 | -0.1806 | 0.0646 | -0.6091* | -0.0037 | 1 |
| | 0 | 0 | 0.4628 | 0.0567 | 0.4988 | 0 | 0.9692 | 0 |

Source: Researchers, 2020

V. Regression Analysis

Regression analysis on the effect of working capital management affects the firm's profitability. The results of the regression analysis are shown in the table 6 below. The adjusted R² of the model is 0.6188 and value for the R² in the model is 0.6429 which imply that 64.29% of the variation in the dependent variable is explained by the model while the 35.71% variation in the dependent variable explained by the error term.

Regression results indicate that ITID and ACP have negative coefficients which imply that the increase in ITID and ACP will significantly lower the firm's profitability, while decrease in ITID and ACP will significantly raise the firm's profitability. APP has a positive coefficient of 3.90e⁻¹⁰ with p-value 0.478 implying that the increase in the average payment period, insignificantly raise the firm's profitability, while also, the decrease in average payment period will insignificantly lower the firm's profitability. The positive relationship between average payment period and firms' profitability indicates that the longer the firms take to pay their bills, the more profitable the firm is. Also vice versa is true. The cash conversion cycle is used to measure efficiency of working capital management. Regression results indicate that there is a positive 0.000564 relationship between cash conversion cycle and profitability which implies that the increase in cash conversion cycle significantly raise the firm's profitability, while also, the decrease in cash conversion cycle significantly lower the form's profitability. Also inventory turnover in days shows a negative (-1.33e⁻¹⁰) relationship with profitability which indicates that if the inventory turnover in days increases, the profitability decreases. Also vice versa is true. The size of the firm has a negative impact on profitability implying that with the firm's increase in size, profitability declines. Leverage also shows a negative relationship with profitability which indicates that when the Debt Ratio increases, the profitability decreases. However, current ratio has a positive impact on profitability, meaning that, the higher the current ration, the higher the firm's profitability, and the lower the current ratio the lower the firm's profitability.

Table 6: Regression Results

| Source | SS | df | MS | Number of Observation = 112 | | | |
|----------|------------|-----------|-------------|-----------------------------|---|----------------------|------------|
| Model | 3.65670991 | 7 | 0.52238713 | F (7, 104) | = | 26.74 | |
| Residual | 2.03142379 | 104 | 0.019532921 | Prob > F | = | 0.0000 | |
| Total | 5.6881337 | 111 | 0.051244448 | R-squared | = | 0.6429 | |
| | | | | Adj R-squared | = | 0.6188 | |
| | | | | Root MSE | = | 0.13976 | |
| ROA | Coef. | Std Err. | t | P> | t | [95% Conf. Interval] | |
| CCC | 0.000564 | 0.0002106 | 2.68 | 0.009 | | 0.0001464 | 0.0009817 |
| APP | 3.90e-10 | 5.47e-10 | 0.71 | 0.478 | | -6.95e-10 | 1.47e-09 |
| ITID | -1.33e-10 | 7.04e-11 | -1.90 | 0.061 | | -2.73e-10 | 6.11e-12 |
| ACP | -0.0007725 | 0.0002722 | -2.84 | 0.005 | | -0.0013123 | 0.0002327 |
| DR | -0.2744875 | 0.0930363 | -2.95 | 0.004 | | -0.458982 | -0.0899931 |
| SIZE | -0.0517651 | 0.0101638 | -5.09 | 0.000 | | -0.0719203 | -0.0316099 |
| CR | 0.0494587 | 0.015813 | 3.13 | 0.002 | | 0.018101 | 0.0808165 |
| -cons | 0.648415 | 0.0942857 | 6.88 | 0.000 | | 0.461443 | 0.835387 |

Source: Researcher, 2020

VI. Discussion

In this case, The Average Collection Period; on average it takes about 51 days to fully collect money from credit buyers (about 2 months) and the Average Collection Period regression coefficient is negatively correlated with firm's profitability. In this regard, firms' managers manage the account receivables effectively, and thus reduce the provision for account receivables, and opportunity cost, and so, raises the financial performance.

Inventory turnover in days: on average, it takes a company 1 day to consume inventory and the ITID regression coefficient in this study is negatively correlated with firms' profitability. With this result, the Tanzanian enterprises should focus to prolong the days of inventory to mitigate the risk of goods shortage,

which may interrupt the supply chain, and lower firms' profitability. To avoid abundant inventory which may cause loss, enterprises should verify the reorder level and reorder time, and focus on storing the fast moving goods. In addition, firms may employ accounting packages for inventory control.

Average payables' conversion period: on average, it takes enterprises about 2 days to fully pay for the suppliers and the APP regression coefficient is negatively correlated with firms' profitability. Therefore, the enterprises should defer payment to suppliers legally to improve financing supply- though to some extent will lower the profitability.

The cash conversion cycle: CCC has a direct relationship with firm's profitability though it is tight relationship. According to this result, if the CCC is prolonged, the firm's profitability will also be raised. However, CCC is determined by three components which are account receivable collection period, inventory turnover in days and average payables conversion period that are managed in different ways to maximize the firms' profitability. Our control variables (debt ratio, firm's size) have significant negative effect on firms' profitability, while Current Ratio has significant positive relation with firms' profitability.

VII. Conclusions

This study describes the effect of working capital management on firms' profitability of Tanzanian non financial firms listed on Dar es salaam stock exchange for the period 2005 - 2018.

Pearson correlation for variables used in the regression model. Pearson's correlation analysis is used to find the relationship between working capital management and firm's profitability. Further explanations regarding the effect of working capital management on firms' profitability are as follows:

Firstly, the Average Collection Period; on average it takes about 51 days to fully collect money from credit buyers (about 2 months) and the Average Collection Period regression coefficient is negatively correlated with firm's profitability. In this case firms' managers manage the account receivables effectively, and thus reduce the provision for account receivables, and opportunity cost, and so, raises the financial performance.

Secondly, Inventory turnover in days: on average, it takes a company 1 day to consume inventory and the ITID regression coefficient in this study is negatively correlated with firms' profitability. With this result, the Tanzanian enterprises should focus to prolong the days of inventory to mitigate the risk of goods shortage, which may interrupt the supply chain, and lower firms' profitability. To avoid abundant inventory which may cause loss, enterprises should verify the reorder level and reorder time, and focus on storing the fast moving goods. In addition, firms may employ accounting packages for inventory control.

Thirdly, Average payables' conversion period: on average, it takes enterprises about 2 days to fully pay for the suppliers and the APP regression coefficient is negatively correlated with firms' profitability. Therefore, the enterprises should defer payment to suppliers legally to improve financing supply- though to some extent will lower the profitability.

Fourthly, the cash conversion cycle: CCC has a direct relationship with firm's profitability though it is tight relationship. According to this result, if the CCC is prolonged, the firm's profitability will also be raised. However, CCC is determined by three components which are account receivable collection period, inventory turnover in days and average payables conversion period that are managed in different ways to maximize the firms' profitability. Our control variables (debt ratio, firm's size) have significant negative effect on firms' profitability, while Current Ratio has significant positive relation with firms' profitability.

Due to Tanzania being in the move to the middle income countries, working capital and capital structure take a very critical role that make decision makers and firms' managers focus on it.

The findings denote that, there is significant statistical relation between working capital management and firms' profitability. Our empirical results have theoretical and empirical implications. Theoretically, the study contributes in the literature regarding working capital management and firms' profitability.

Finally, we recommend that, non-financing firms' policy makers in Tanzania to carefully formulate short-term investments and financing policies due to the fact that, they have significant effect on firms' profitability.

Acknowledgement

We would like to thank the Almighty God for his mercy that we managed to write and publish this paper. Next, we would like to thank Mr. Jumanne Mng'ang'a for his material contribution especially in using statistical analysis tools. Next, our heart-fully thanks to Mrs. Mary w/o Nyabakora, their Children: Kasawa, Kisimba, Prosper, Lightness, and Gasper for their moral support and encouragements all the period when preparing this research paper. Last but not in least, we would like to thank the Management of Local Government Training Institute, Mzee Gasper Mahe and his family, and all who indirectly supported to make possible the publication of this research paper. We alone are responsible for any errors © 2020 by Wakara Ibrahim Nyabakora. All rights reserved.

References

- [1]. Afrifa, G., Tauringana, V., & Tingbani, I. (2015). Working Capital Management and Performance of Listed SMEs". Journal of Small Business & Entrepreneurship, Forthcoming, 25-55.
- [2]. Akoto, R., Awunko-Vitor, A., & Angmor, P. (2013). "Working capital Management and Profitability: Evidence from Ghanaian Listed Manufacturing Firms". Journal of Economics and International Finance, 374-379].
- [3]. Aktas, N., Croci, E., & Petmezas, D. (2018). Is Working Capital Management Value-enhancing? Evidence from Firm Performance and Investments. Journal of Corporate Finance, 30, 98-113.
- [4]. Alipour, M. (2011). Working Capital Management and Corporate Profitability: Evidence from Iran. World Applied Sciences Journal, 12(7), 1093-1099.
- [5]. Ani, W. U., Okwo, M. I., & Ugwunta, D. O. (2012). Effects of Working Capital Management in Profitability: Evidence from Top Five Beer Brewery Firms in the World. Asian Economic and Financial Review, 2(8), 966-982.
- [6]. Aregbeyen, O. (2013). The Effects of Working Capital Management on the Profitability of Nigerian Manufacturing Firms. Journal of Business Economics and Management, 14(3), 520-534.
- [7]. Arnold, G., (2008). "Corporate Financial Management", 4th ed. Harlow: Financial Times Prentice Hall Brealey,
- [8]. Arunkumar, O. N., & Ramanan, T. R. (2013). Working Capital Management and profitability: A Sensitivity Analysis. International Journal of Research and Development: A Management review, 2, 52-58.
- [9]. Dar es Salaam Stock Exchange (DSE) in Tanzania, Available at: <http://www.dse.co.tz>,
- [10]. Deloof, M. (2003). "Does Working Capital Management Affect Profitability of Belgian Firms?". Journal of Business Finance & Accounting, 573-587.
- [11]. Dinku, T. (2013). Impact of Working Capital Management on Profitability of Micro and Small Enterprises in Ethiopia: The Case of Bahir Dar City Administration. International Journal of Accounting and Taxation, 1(1), 15-24. <http://doi.org/10.15640/ijat>.
- [12]. Eljelly, A. (2004). "Liquidity - Profitability Trade Off: An Empirical Investment in an Emerging Market". International Journal of Commerce and Management, 48-61.
- [13]. Erasmus, P. (2010). The Relationship Between Working Capital Management and Profitability for South African Listed Industrial Firms. The Business Review, 15(1), 183-188.
- [14]. Evci, S., & Şak, N. (2018). The Effect of Working Capital Management on Profitability in Emerging Countries: Evidence from Turkey. Financial Management from an Emerging Market Perspective, 205-218. <http://dx.doi.org/10.5772/intechopen.70871>.
- [15]. Gachira, W., Chiwanzwa, W., Nkomo, D. J., & Chikore, R. (2014). Working Capital Management and the Profitability of Non-Financial Firms Listed on the Zimbabwe Stock Exchange (ZSE). European Journal of Business and Economics, 9(2), 12-15.
- [16]. Kodithuwakku, S. (2015). Impact of Working Capital Management on Profitability: A Study on Listed Manufacturing Companies in Colombo Stock Exchange. Proceedings of 12th International Conference on Business Management (pp. 1-13). Colombo
- [17]. Korent, D., & Orsag, S. (2018). The Impact of Working Capital Management on Profitability of Croatian Software Companies. Zagreb International Review of Economics & Business, 21(1), 47-65. DOI: 10.2478/zireb-2018-0007.
- [18]. Moser, C.A and Kalton, G. (1971). Survey Methods in Social Investigation, Gower, Aldershot
- [19]. Napompech, K. (2012). Effects of Working Capital Management on the Profitability of Thai Listed Firms. International Journal of Trade, Economics and Finance, 3(3), 227.
- [20]. Nazir M S and Afza T, (2009). Working Capital Requirements and the Determining Factors in Pakistan. IUP Journal of Applied Finance, 15(4), 28,
- [21]. Nyabakora, W. et al. (2018), How Firm Characteristics Affect Firm Capital Structure Decision – The Case of Tanzania. International Journal of African and Asian Studies www.iiste.org ISSN 2409-6938 An International Peer-reviewed Journal Vol.48, 2018
- [22]. Pais, M. A., & Gama, M. P. (2015). Working Capital Management and SMEs Profitability: Portuguese Evidence. International Journal of Managerial Finance, 11(3), 341-358. <https://doi.org/10.1108/IJMF-11-2014-0170>.
- [23]. Ponsian and Chrispin (2014) the effects Working Capital Management on Profitability-case of Pakistani Manufacturing Firms. International Journal of Economics, Finance and Management Sciences Vol. 2 No. 6, 2014 pp. 347-355.
- [24]. Ponsian, N., Chrispina, K., Tago, G., & Mkiibi, H. (2014). The Effect of Working Capital Management on Profitability. International Journal of Economics, Finance and Management Sciences, 2(6), 347-355. doi: 10.11648/j.ijefm.20140206.17.
- [25]. R.A., Mayers, S.C., Allen, F., (2006). Corporate Finance. 8th ed. New
- [26]. S. Ban'os-Caballero, Pedro J. Garcí'a-Teruel & Pedro Martí'nez-Solano. (2010). Working Capital Management in SMEs. Accounting and Finance, 50, 511-527. <https://doi.org/10.1111/j.1467-629X.2009.00331.x>
- [27]. Samiloglu, F., & Dermigunes, K. (2008). The Effect of Working Capital Management on Firm Profitability: Evidence from Turkey. The International Journal of Applied Economics and Finance, 2(1), 44-50. <https://doi.org/10.3923/ijaef.2008.44.50>
- [28]. Sharma, A., & Kumar, S., (2011). "Effect of Working Capital Management on Firm Profitability: Empirical Evidence from India", Global Business Review, 12(1), pp. 159 – 173.
- [29]. Shin, H. & Soenen, L. (1998). Efficiency of Working Capital Management and Corporate Profitability. Financial Practice and Education, 8 (2), 37-45.
- [30]. Tanzania Company Act. Cap. 2002
- [31]. World Economic Forum, (2017): <https://www.weforum.org/agenda/2017/06/these-are-the-worlds-fastest-growing-economies-in-2017-2/>; Reference made in December, 2019.

Wakara Ibrahimu Nyabakora. "The Effect of Working Capital Management on Firm's Profitability (A Case of Tanzania)." *IOSR Journal of Business and Management (IOSR-JBM)*, 22(5), 2020, pp. 19-27.