

# The Impact of Working Capital Management on Firms' Profitability- Case of Selected Sole Proprietorship Manufacturing Firms in Adama City

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**Abstract:** Working capital management is an important aspect of financial management. Since working capital significantly affects profitability and healthiness of businesses, prudent management of working capital is necessary for the success of firms. The researcher selected the title because no study is conducted on the impact of working capital management on the profitability of manufacturing firms particularly in case of sole proprietorship manufacturing firms in Adama City.

For this purpose, the researcher collected quantitative data from financial statements covering a period of 2007-2012 for 10 sole proprietorship manufacturing firms in Adama city that have been selected by purposive sampling method. The research design was explanatory research and profitability was measured in terms of net operating profit (NOP). The study used descriptive statistics, and balanced fixed effect panel regression to analyze the data. The final findings of the study showed that average payment period has significant positive relationship with profitability while sales growth and size of the firm influence significantly in opposite direction on firms profitability. The study concludes that the firms are needed to improve their collection and payment policy. The firms can also improve their profitability by identifying and concentrating on target markets rather than simply focusing on increasing sales. Moreover, efficient Management and financing of components of working capital can increase the operating profitability of sole proprietorship manufacturing firms.

**Keywords:** Working capital, working capital management, liquidity, profitability.

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## I. Introduction

### 1.1 Background of the Study

Every running business needs working capital; even including a business which is fully equipped with all types of fixed assets. This is because such business is bound to collapse without (i) adequate supply of raw materials for processing; (ii) cash to pay for wages, power and other costs; (iii) creating a stock of finished goods to feed the market demand regularly; and, (iv) the ability to grant credit to its customers all these require working capital. Working capital is thus like the lifeblood of a business (Lasher, 2006). The business will not be able to carry on day-to-day activities without the availability of adequate working capital. As the study by Padachi (2006) indicates, management of working capital is very important to businesses of all sizes. Working capital represents around 40% of total assets in a manufacturing firm and 50% to 60% of total assets in retailing and wholesales (Moyer et al, 1995). According to Smith (1980), the efficient management of working capital is important from the point of view of liquidity and profitability as well as firm value. Poor management of working capital results in unnecessary investment in unproductive assets or inadequate investment in current assets.

For manufacturing firms, there is a time lag between purchase of raw materials, sale of finished goods and collection of receivables from customers. As the receivables outstanding are not collected at proper time, the firm will be in shortage of working capital and it may not be in a position to meet obligations as they due. On the other hand holding too much working capital bears opportunity costs which otherwise generate profit if it is invested on profitable assets (Brealey et al, 2001). Therefore, Working capital management is important part in firm's financial management decision. An optimal working capital management is expected to contribute positively to the creation of firm value. Working capital management system is an excellent way for many companies to improve their earnings and also it deals with current assets and current liabilities. However, firms with too few current assets may incur shortages and difficulties in maintaining smooth operations. Efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet due short term obligations on the one hand and avoid excessive investment in these assets on the other hand (Raheman and Nasr, 2007). Hence, it is possible to summarize that inefficient management of working capital increases the cost of running the business, which eventually results in

decreasing of profits. Since maximization of profit is the key objective for all firms, this study's main purpose is to analyze and evaluate how the working capital management affects achieving this objective and finally to give recommendation based on the results of findings.

The ultimate objective of any firm is maximizing profit and satisfying shareholders (owners). The main challenge for managers of a given firm is how to achieve this objective. Therefore, in order to maximize profit the cost should be minimized. How the cost can be minimized to increase profit? Working capital management is the important issue that affects profitability of firms. According to Raheman and Nasr (2007), current assets of a typical manufacturing firm accounts for over half of its total assets implying that proper attention should be given for efficient management of working capital.

Working capital management is considered to be a very important element to analyze the organizations' performance while conducting day to day operations, by which balance can be maintained between liquidity and profitability. However, it is also indicated that it is a difficult task for managers to make sure that the business function is running in well-organized and advantageous manner and if there are chances of inequality of current assets and current liability during business operation, firm's growth and profitability will be affected (Azam and Haider, 2011).

The impact of working capital management on firm's profitability has been studied by different researchers in different parts of the world (Raheman and Nasr, 2007; Ahmed, 2012; Padachi, 2006; Napompech, 2012; Sundar, 2012; Quayyum, 2011 and Ganesan, 2007). However, these studies are made on large firms operating within developed money and capital markets of developed countries. In Ethiopian context, researches that are conducted on impact of working capital management on firm's profitability, particularly for manufacturing companies concentrated on share companies, private limited companies, and small and medium scale enterprises (Mulualem, 2011; Nuru, 2012 and Ephrem, 2011). However, based on such findings it is difficult to generalize for sole proprietorship manufacturing firms that finance their business by only debt and operate on capitals obtained from a single person (individual). So the intent of this study was to examine how the working capital management can affect profitability of sole proprietorship manufacturing firms in Adama City. Based on the aforementioned problems, the followings objectives were set under the study:-

1. To examine the impact of average collection period, average payment period and sales growth on net operating profitability.
2. To establish a relationship between liquidity and profitability.
3. To find out the relationship between profitability and size of the firm.
4. To find out the relationship between debt used and profitability.

Against the backdrop of objectives stated above, the following hypotheses were formulated.

**H<sub>0</sub>:1** There is no relationship between liquidity and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>1</sub>:1** There is a positive/negative relationship between liquidity and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>0</sub>:2** There is no relationship between the size and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>1</sub>:2** There is a positive/negative relationship between the size and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>0</sub>:3** There is no relationship between debt used by sole proprietorship manufacturing firms in Adama City and its profitability.

**H<sub>1</sub>:3** There is a positive/negative relationship between debt used and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>0</sub>:4** There is no relationship between average collection period and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>1</sub>:4** There is positive/negative relationship between average collection period and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>0</sub>:5** There is no relationship between average payment period and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>1</sub>:5** There is positive/negative relationship between average payment period and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>0</sub>:6** There is no relationship between sales growth and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>1</sub>:6** There is positive/negative relationship between sales growth and profitability of sole proprietorship manufacturing firms in Adama City.

## II. Material And Methods

The study was conducted to investigate the impact of working capital management on profitability of selected sole proprietorship manufacturing firms in Adama City covering the period 2007-2012.

**Study Design:** An explanatory research design

**Study Location:** The study was conducted on sole proprietorship manufacturing firms in Adama City, Ethiopia.

**Study Duration:** July 2007 to July 2012

**Sample size and selection method:** From a total of 21 sole proprietorship manufacturing firms in Adama City, the researcher purposively selected 10 to include only firms maintaining financial statements in the sample, because this cannot be obtained by probability sampling method. As a result, all firms maintaining required financial data for the study are selected as a sample.

### Procedure methodology

The study used descriptive statistics and regression analysis to analyze collected data. Descriptive statistics were used to describe relevant aspects of observable facts about the variables and provide detailed information about each relevant variable. Under this, mean, median, standard deviation, maximum and minimum values of the required variables have been computed. On the other hand, balanced fixed effect panel regression model was used after completing tests of classical linear regression model (CLRM) assumptions. The balanced fixed effect panel regression model was used to measure and estimate the causal relationships between net operating profit and explanatory variables. In analyzing the data, the researcher used Eviews 6 software programme.

**Model Specification:** The model used in this study is similar to models of previous studies such as Raheman and Nasr (2007), Morawakage and Lakshan (2007), and Mulualem (2011). Pooled regression type of panel data analysis was used in this study. The pooled regression, which is also called the constant coefficients model, is one in which both intercepts and slopes are constant, and the cross section from a data and time series data are pooled together in a single column, assuming that there are no significant cross section or temporal effects which is deemed to have advantages over cross sectional and time series data methodology (Gujarati, 2004).

The general form of the model is:

$$NOP_{it} = \beta_0 + \sum_{i=1}^n \beta_i X_{it} + \varepsilon$$

Where:

**NOP<sub>it</sub>**: Net Operating Profitability of firm *i* at time *t*; *i* = 1, 2, ..., 10 firms.

**β<sub>0</sub>**: The intercept of equation

**β<sub>i</sub>**: Coefficients of *X<sub>it</sub>* variables

***X<sub>it</sub>***: The different independent variables for working capital Management of firm *i* at time *t*

***t***: Time = 1, 2, ..., 6 years.

**ε**: The error term

When the above general least square model is converted in to specified variables, it is rewritten as:

$$NOP_{it} = \beta_0 + \beta_1 (ACP_{it}) + \beta_2 (APP_{it}) + \beta_3 (CR_{it}) + \beta_4 (DR_{it}) + \beta_5 (LOS_{it}) + \beta_6 (SG_{it}) + \varepsilon$$

Where:

NOP= Net operating profitability

ACP= Average collection period

APP= Average payment period

CR= Current ratio

DR= Debt ratio

LOS = Natural logarithm of Sales

SG= Sales growth

ε= Error term

**Summary of description and measurement of Variables**

Variable	Measurement	Abbreviation
Net operating profit	Earnings before interest and tax/ Total assets	NOP
Average collection period	(Accounts receivable/Net sales) x 365	ACP
Average payment period	(Accounts payable/purchases) x 365	APP
Current ratio	Current assets/ Current liabilities	CR
Debt ratio	Total liabilities/ Total assets	DR
Firm size	Natural logarithm of sales	LOS
Sales growth	$\frac{\text{Current year's sales} - \text{Previous year's sales}}{\text{Previous year's sales}}$	SG

**III. Result**

Table no1 provides descriptive statistics of dependent and independent variables for selected sole proprietor manufacturing business enterprises in Adama City for the years 2007-2012. In order to measure mean, median, maximum values, minimum values and standard deviation of different variables, the summary data computed for each variable is shown on the table 4.1 given below.

**Table no 1 Descriptive Statistics of the Variables**

	NOP	ACP	APP	CR	DR	LOS	SG
Mean	0.04853	19.16809	20.78914	8.16992	0.46703	16.00174	0.23916
Median	0.04281	17.41912	20.07005	1.34337	0.46550	16.24250	0.18755
Maximum	0.17993	62.45433	41.81010	127.4623	0.86779	19.40679	1.89336
Minimum	0.00145	0.00279	0.21604	0.22876	0.00274	12.09721	-0.99888
Std. Dev.	0.04190	16.60389	11.79050	23.35822	0.26394	1.85561	0.52967
Observations	60	60	60	60	60	60	60

Source: Eviews 6 output

The mean value of net operating profitability is 0.04853 percent of total assets with a standard deviation 0.04190 percent imply that the value of profitability can deviate by 0.04190 percent from its mean to both sides. The maximum value for the net operating profitability is 18 percent for the firms in a year while the minimum is 0.15 percent.

Firms collect payment against sales after an average of 19 days and standard deviation is 17 days. Minimum and maximum time taken by firms to collect cash from receivables is 0.003 day and 62 days respectively.

Firms take an average 21 days to pay their purchases with standard deviation of 12 days. Here, minimum time taken by firms is 0.22 days, and maximum time taken for this purpose is 42 days. When the average collection period is compared with average payment period, the maximum time taken for the firm to collect cash from the customers and to pay suppliers was 62.5 days and 42 days respectively. However, on average, the average collection period and average payment period are almost equal (19 and 21 days respectively). This shows the firm has poor collection as well as payment policy.

To check the liquidity of the firm, current ratio which is a traditional measure of liquidity is used. The results reveal that average current ratio for the firm is 8.17 with a standard deviation of 23.36. The highest current ratio for a firm in a particular year is 127.46 times and that of the minimum ratio for a firm in a year is 0.23.

Debt ratio is used to check the debt financing and its relationship with the profitability, and the results show that the average debt ratio for the firm is 47% with a standard deviation of 26%. The maximum debt financing used by a firm is 87% while the minimum is 0.3%.

Natural logarithm of sales is used to check the size of the firm and its relationship with profitability. The mean, standard deviation, maximum and minimum value of log of sales revealed 16, 1.86, 19.41, and 12.10 respectively.

In addition, to check the sales growth and its impact on profitability, sales growth is used as another independent variable and the results of descriptive statistics show that the average sales growth for the selected sole proprietor manufacturing firms in Adama City is 24 percent with a standard deviation of 53 percent. The maximum and minimum values for this purpose are 1.89 and -0.999 respectively.

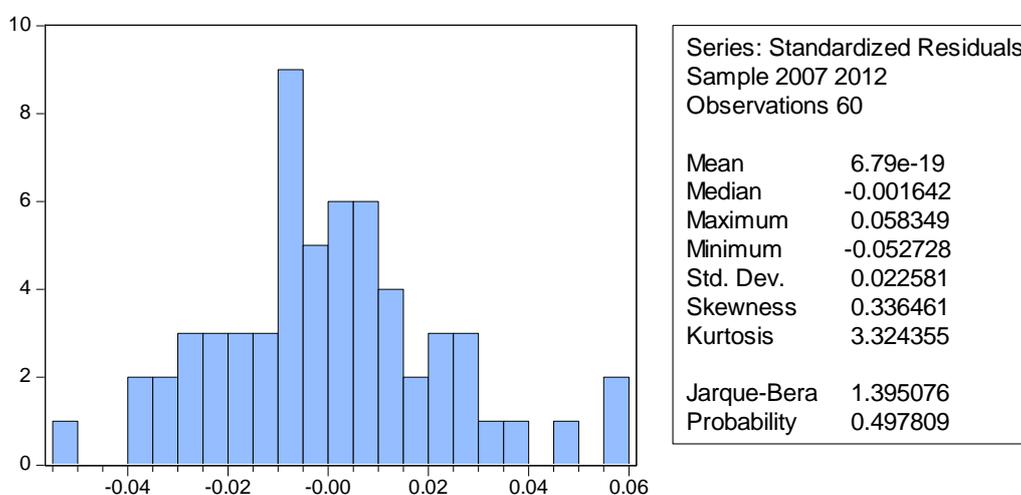
**Testing of Assumptions of CLRM**

In order to draw correct estimation, using regression model to analyze the data requires certain assumptions to be fulfilled. Under this subsection, the study presented five different results for the tests of CLRM such as tests of normality assumption, tests for multicollinearity, tests for the assumption that errors have zero mean, tests for homoscedasticity and tests for the absence of autocorrelation.

**1. Normality test**

Before using OLS regression analysis, normality test was carried out for all independent variables. Normality assumption of the regression model was tested with the Jarque- Bera measure. As the result depicted on figure 4.1 shows, histogram is bell shaped implying that the distribution is normal. Jarque-Bera statistic is 1.3951 with a p-value of 0.4978. Since the p-value is greater than 0.05, it supports the null hypothesis of presence of normal distribution. In addition, the histogram also signifies that skewness is nearer to zero and kurtosis is closer to 3 implying that the data fulfills normality assumption.

**Figure 1: Histogram of normality test**



**2. Multicollinearity test**

Multicollinearity is the existence of a perfect, or exact, linear relationship among some or all explanatory variables of a regression model. If the explanatory variables were correlated to one another, adding or removing a variable from a regression equation would cause the values of the coefficients on the other variables to change. If an independent variable is an exact linear combination of the other independent variables, then it says the model suffers from perfect collinearity, and it cannot be estimated by OLS (Brooks, 2008).

According to Churchill and Iacobucci (2005), when there is multicollinearity, the amount of information about the effect of explanatory variables on dependent variables decreases. However, there is no clear and single convention about how much correlation causes multicollinearity. For example, Hair et al (2006) argued that correlation coefficient below 0.9 may not cause serious multicollinearity problem. On the other hand, Malhotra (2007) stated that multicollinearity problem exists when the correlation coefficient among variables is greater than 0.75. Kennedy (2008) suggested that the correlation coefficient above 0.7 could cause a serious multicollinearity problem leading to inefficient estimation and less reliable results.

In order to identify whether there is multicollinearity problem among the independent variables, Pearson correlation for the variables was calculated as shown on the table 4.4 below. The results in the correlation matrix show that the highest correlation of 0.412 which is between sales growth and size of the firm (natural logarithm of sales). For the purpose of this study, there is no correlation above the aforementioned levels. Hence, it is possible to conclude that there is no multicollinearity problem among the independent variables so that the results can be successfully estimated.

**Table no 2 Correlation matrix between explanatory variables**

	ACP	APP	CR	DR	LOS	SG
ACP	1.000000					
APP	0.024810	1.000000				
CR	0.139929	0.242251	1.000000			
DR	-0.029637	0.210073	-0.201720	1.000000		
LOS	-0.331107	0.294087	-0.221543	0.363164	1.000000	
SG	-0.252462	0.113299	-0.027787	0.070706	0.411511	1.000000

Source: Eviews 6 output

**3. Test for the assumption “Errors have zero mean ( $u_i = 0$ )”**

If a constant term is included in the regression equation, this assumption will never be violated (Brooks, 2008). Accordingly, a constant term is included in the regression result of study and this shows that the assumption is not violated.

**4. Test for homoscedasticity (Constant variance of errors) ( $Var(u_i) = \sigma^2 < \infty$ )**

The assumption of the CLRM states that the variance of the errors is constant or equal is known as homoscedasticity (i.e. it is assumed that  $var(ui) = \sigma^2$ ). If the variance of the errors is not constant, this would be known as heteroscedasticity (Gujarati, 2004). This study used white test to identify heteroscedasticity across the range of explanatory variables if any.

The result in table 4.3 shows, the F-,  $\chi^2$ , and scaled explained SS versions of the test statistic give the same conclusion that reveals the absence of heteroscedasticity as the p-values in all of the cases were above 0.05. Therefore, the null hypothesis of heteroscedasticity should be rejected.

**Table no 3: Heteroscedasticity test: White**

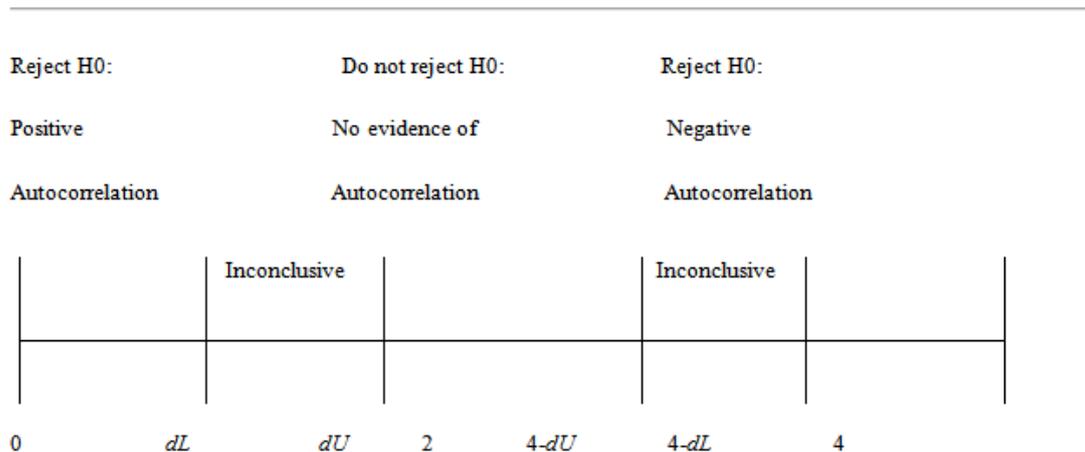
F-statistic	1.467762	Prob. F(27,32)	0.1486
Obs*R-squared	33.19543	Prob. Chi-Square(27)	0.1907
Scaled explained SS	40.05786	Prob. Chi-Square(27)	0.0506

Source: Eviews 6 output

**5. Test for autocorrelation**

Durbin –Watson test is used to prove the absence of autocorrelation. According to Brooks (2008), DW has 2 critical values: an upper critical value and a lower critical value, and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. In this test, the null hypothesis is rejected and the existence of positive autocorrelation presumed if DW is less than the lower critical value; the null hypothesis is rejected and an existence of negative autocorrelation is presumed , if DW is greater than 4 minus the lower critical value; the null hypothesis is not rejected and no significant residual autocorrelation is presumed if DW is between the upper critical value and 4 minus the upper limits; the null hypothesis is neither rejected nor not rejected if DW is between the lower and upper limits, and between 4 minus the upper and 4 minus the lower limit.

**Figure 2: Rejection and Non-Rejection Regions for DW Test**



The DW test statistic value in the regression result was 2.069 which is closer to 2. There are a total of 60 observations and 6 regressors (excluding the intercept) in the regression. According to DW stat table, the relevant critical values for the test were  $dL = 1.214$ ,  $dU = 1.639$ , so  $4 - dU = 2.361$  and  $4 - dL = 2.786$ . This indicates that test statistic is between the upper critical value and 4 minus the upper limits implying that the null hypothesis should not be rejected and no significant residual autocorrelation is presumed.

**Selection of Random effect (RE) versus Fixed effect (FE) Models**

The main objective of this section was to select the best model for the study based on the results obtained from hausman test. There are different ways of selecting the best model. According to Gujarati (2004), if T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model/FEM and random effect model/REM. On the other hand, Brooks (2008) argued that REM is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population, but a FEM is more plausible when the entities in the sample effectively constitute the entire population/sample frame. Since the sample for this study was not selected randomly, Hausman test was employed to check preferable model and the result is presented as follows.

**Table no 4: Correlated Random Effects-Hausman Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	16.755781	6	0.0102

Source: Eviews 6 output

As it is shown on the table 4.4, the p-value for the test is 0.0102 (which is less than 0.05). Therefore, since the p-value of the test is less than 0.05, the null hypothesis of the Hausman test that the random effect method is the preferred regression method was rejected. By having this evidence, the researcher preferred the fixed effect model to examine the relationship between net operating profit and explanatory variables.

**Results of the regression analysis**

The main objective of this section was to examine the association between the dependent variable and explanatory variables. Accordingly, the result obtained by the fixed effect model that explains regression results between the dependent variable ( net operating profitability) and explanatory variables is analyzed. The regression result on table no 4 shows that dependent variable (net operating profit) is 70.96 percent explained by its independent variables (i.e. R2= 0.7096), which is very large. From this result, it can be concluded that the regression model used for the study has highly explained the overall model signifying the study was not lost very important variables that affect the study's output. The regression F-statistic (7.17) and the p-value of zero attached to the test statistic reveal that the null hypothesis that all of the coefficients are jointly zero should be rejected.

**Regression result- Fixed Effect Model**

$$NOP_{it} = \beta_0 + \beta_1 (ACP_{it}) + \beta_2 (APP_{it}) + \beta_3 (CR_{it}) + \beta_4 (DR_{it}) + \beta_5 (LOS_{it}) + \beta_6 (SG_{it}) + \epsilon$$

$$NOP = -0.239969 -0.000735ACP + 0.002312APP + 1.67E-05CR -0.034398DR + 0.017126 LOS -0.015069SG + \epsilon$$

**Table no 5: Regression results- Fixed Effect Model**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.239969	0.114320	-2.099096	0.0416
ACP	-0.000735	0.000522	-1.406803	0.1665
APP	0.002312	0.000542	4.264655	0.0001***
CR	1.67E-05	0.000200	0.083284	0.9340
DR	-0.034398	0.022631	-1.519930	0.1357
LOS	0.017126	0.006775	2.527711	0.0151**
SG	-0.015069	0.007412	-2.033060	0.0481**
R-squared	0.709601	Mean dependent var		0.048529
Adjusted R-squared	0.610601	S.D. dependent var		0.041903
S.E. of regression	0.026148	Durbin-Watson stat		2.068977
Sum squared resid	0.030084			
F-statistic	7.167703			
Prob(F-statistic)	0.000000			

\*\*\*, \*\* indicates significance at 1% and 5% level respectively.

Source: Eviews 6 output

#### **IV. Discussion**

The regression result indicates that the coefficient of average collection period is negative implies that the increase or decrease in the number of days taken by firms to collect cash will affect profitability of the firm in opposite direction. This means as the number of days to collect cash from credit customers becomes too long; it will reduce profitability of the firms.

The regression result also shows that there is highly significant positive relationship between average payment period and profitability. The relationship is significant at 1%, and implies that the increase or decrease in the average payment period significantly affects profitability of the firm in the same direction. The positive relationship between the average payment period and profitability indicates that the more profitable firms wait longer to pay their bills. On the other hand, current ratio which is the traditional measure of profitability shows no significant relationship between liquidity and profitability.

The debt ratio is used as a proxy for leverage and it shows a negative relationship between with the dependent variable, which means that, when leverage of the firm increases, it will result in declining of firms' profitability. The coefficient of this variable shows that per one percent increase in the debt ratio, there is a possibility that profitability will decrease by 3.44 percent.

The size of the firm has a direct positive relationship with profitability of the firm. If the size (LOS) increases, it will lead to increasing profitability of the firm. Analysis of the regression shows that there is significant positive relationship with a coefficient of 0.017 and p-value of 0.015 at a significance level of 5%. This implies that per one unit increase in log of sales the firms earn 0.017 as extra return. This means that as the firm's size gets bigger, profitability increases when compared to firms of smaller size.

The increase in sales has a negative impact on profitability. Similarly, the finding is consistent with previous research who found negative relationship between sales growth and profitability (Reid, 1995; Hoy, 1992 and Glancy, 1998). However, the study's finding is differed from the findings of Raheman and Nasr (2007) and Muluaem (2011) who found positive relationship between sales growth and profitability.

#### ***Hypotheses testing***

This section provides analysis for the results obtained from the regression result and compares it with the preset hypothesis. For hypothesis set in the study, the researcher concluded the following points:

#### ***Hypothesis 1:***

**H<sub>0</sub>:** There is no relationship between liquidity and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>1</sub>:** There is a negative/positive relationship between liquidity and profitability of sole proprietorship manufacturing firms in Adama City.

The regression output concerning the first hypothesis revealed that there is a positive relationship between liquidity and profitability of a firm with a confidence level of 7%. Therefore, the null hypothesis is rejected.

#### ***Hypothesis 2:***

**H<sub>0</sub>:** There is no relationship between the size and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>1</sub>:** There is a positive/negative relationship between the size and profitability of sole proprietorship manufacturing firms in Adama City.

For this hypothesis, the regression result revealed that p-value is significant at 5% significance level and it shows that there is positive relationship between size of the firm and profitability implying that profitability of sole proprietor manufacturing firms in Adama City highly influenced by the size of firms. As a result, the researcher rejected null hypothesis.

#### ***Hypothesis 3:***

**H<sub>0</sub>:** There is no relationship between profitability and debt used by sole proprietorship manufacturing firms in Adama City and it profitability.

**H<sub>1</sub>:** There is a negative/positive relationship between debt used and profitability of sole proprietorship manufacturing firms in Adama City.

The researcher rejected null hypothesis concerning the debt financing as coefficient of regression result shows that profitability decreases when debt financing increases. This is interpreted that debt financing increases

financial cost which in turn decrease profitability of firms. However, the p-value in this regard is not significant as it revealed 14%.

**Hypothesis 4:**

**H<sub>0</sub>:4** There is no relationship between average collection period and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>1</sub>:4** There is positive/negative relationship between average collection period and profitability of sole proprietorship manufacturing firms in Adama City.

The researcher rejected the fourth hypothesis; that tells there is no relationship between average collection period and profitability, because the result of analysis shows that negative relationship exists between average collection period and net operating profitability with a p-value of 16.65%.

**Hypothesis 5:**

**H<sub>0</sub>:5** There is no relationship between average payment period and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>1</sub>:5** There is positive/negative relationship between average payment period and profitability of sole proprietorship manufacturing firms in Adama City.

There is strong significant positive relationship between average payment period and net operating profit at 1% significance level. The null hypothesis is rejected here also.

**Hypothesis 6:**

**H<sub>0</sub>:6** There is no relationship between sales growth and profitability of sole proprietorship manufacturing firms in Adama City.

**H<sub>1</sub>:6** There is positive/negative relationship between sales growth and profitability of sole proprietorship manufacturing firms in Adama City.

Since the result of regression analysis indicated negative significant relationship between net operating profitability and sales growth at 5%, the null hypothesis that states there is no relationship between net operating profitability and sales growth is be rejected.

## **V. Conclusions And Recommendations**

The results of descriptive statistics indicated that maximum time taken by the firm to collect their receivable was 62.45 days while the minimum was 0.003 days. However, the average for this purpose showed 19 days with a standard deviation of 16.6 days. The maximum and minimum time taken by the firm to pay their suppliers was 42 and 0.2 days respectively while the average was 21 days with a standard deviation of 12 days. The descriptive analysis showed that the firm has poor collection policy. When compared with the maximum value, the maximum average collection period is higher than that of average payment period. And on average, average payment period and average collection period are almost equal. Similarly, descriptive statistics for all variables was analyzed in the study.

Secondly fixed effect regression model was used to examine the relationship between dependent variable and independent variables. Results of regression analysis revealed that average payment period (APP), size of the firm and sales growth have significant impact on profitability of firms. In this regard, average payment period and size of the firm have positive and significant impact whereas sales growth was negatively and significantly related with profitability. The level of significance for the variables average payment period was at 1% whereas size of the firm and sales growth are significant at 5% each. The negative relationship between average collection period and profitability indicated that less profitable firms wait longer to collect receivables from customers where as positive relationship between average payment period and profitability was consistent with the view that less profitable firms pay their bills earlier. On the other hand, debt ratio and profitability showed negative and insignificant relationship while current ratio has no significant relationship with profitability.

The overall result showed that working capital management plays a key role in value creation and significantly affects profitability of sole proprietorship manufacturing firms in Adama City.

Based on the results of findings, researcher provided the following possible recommendations:

- The positive relationship between average payment period and net operating profit shows that as average payment period increase, profitability of the firm increases. Therefore, firms should adopt payment policy that slowdown their payments.
- The firms can increase profit by shortening average collection period as the negative relationship between the two suggests. Therefore, in order to increase profit the firms should accelerate their receivables by implementing applicable collection policy.

- Negative relationship between sales growths indicates that as sales level increases, profitability of firms decreases. Since sole proprietorship firms are run by the capital of single individual, the researcher recommends on this issue that the firm should select target market because of limited capital of firm by its establishments compared to other types of firms such as share companies and private limited companies.
- For efficient working capital management, it is better to hire specialized persons in the fields of finance to assist in the running of the business and to contribute advice in business operations.

### References

- [1]. Afza, T. and Nazir, M. 2007. "Working Capital Management Practices of Firms: Empirical Evidence from Pakistan", North South University, Dhaka, Bangladesh.
- [2]. Ahmed, I. 2006. "Impact of working capital management on performance of listed non financial companies of Pakistan: application of OLS and LOGIT Models", University of Sargodha, Pakistan.
- [3]. Ahmed, I. 2012. "Impact of working capital management on performance of listed non financial companies of Pakistan: application of OLS and LOGIT Models", University of Sargodha, Pakistan.
- [4]. Azam, M. and Haider, I. 2011. "Impact of Working Capital Management on Firms' Performance: Evidence from Non-Financial Institutions of KSE-30 index", Interdisciplinary journal of contemporary research in business VOL 3, NO 5, pp. 481-492.
- [5]. Bagchi, B. and Khamrui, B. 2012. "Relationship between working capital management and profitability: a study of selected FMCG companies in India", Business and economics journal.
- [6]. Baig, A. 2008. "working capital management: a comparative study of different ownerships", Management & Change, Volume 13, Number 1 (2009)
- [7]. Bamlaku, K. 2012. "Assessing working capital management practices of selected manufacturing enterprises in Addis Ababa", Master thesis, Addis Ababa, Ethiopia.
- [8]. Bhunia, A., Khan, I., and Mukhuti, S. 2011. "A Study of Managing Liquidity in selected private sector Indian steel industry", Journal of management Research, Vol. 3, No. 2: E8
- [9]. Brealey, A., Myers. C. and Marcus J. 2001. "Fundamentals of corporate Finance", 3<sup>rd</sup> ed., McGraw-Hill Companies, Inc., United States of America.
- [10]. Brigham, F. and Daves, R. 2007. "Intermediate Financial Management", 9<sup>th</sup> ed., Thomson/South-Western Publishing, United States of America.
- [11]. Brooks, C. 2008. "Introductory Econometrics of Finance", 2<sup>nd</sup> ed., the ICMA Center, University of Reading, CAMBRIDGE University press.
- [12]. Chandrabai, T., Venkata, K. and Rao, J. 2011. "Working Capital Management in Cement Company", IJMBS Vol. 1, Issue 3.
- [13]. Ching, Y., Novazzi, A and Gerab, F. 2011. "Relationship between working capital management and profitability in Brazilian listed companies", Journal of global business and economics, Vol.3, No.1, pp.74-86.
- [14]. Churchill, G. and Iacobucci, D. 2005. "Marketing Research: Methodological Foundations", 9<sup>th</sup> ed., Thomson South-Western, USA.
- [15]. Corazon, L. M. 2011. "Effect of Working Capital Management and Financial Leverage on Financial Performance of Philippine Firms", management accounting research.
- [16]. Deloof, M. 2003. "Does working capital management affect profitability of Belgian firms", Journal of Business Finance and Accounting, 30: 573-588.
- [17]. Denzil, W. and Antony, H. 2007. "Corporate finance principles and practice", fourth edition, Pearson Education Limited.
- [18]. Ephrem, W. 2011. "Impact of working capital management on profitability of small and medium scale enterprises (SMSs) in Addis Ababa-the case of Nifas-Silk- Lafto and Kirkos subcities", Master thesis, Addis Ababa, Ethiopia.
- [19]. Eugene, F. and Joel, F. Houston. 2001. "Fundamentals of financial management", 9<sup>th</sup> edition, ELM street publishing services, Inc.
- [20]. Eugene, F. and Philp, R. 2007. "Intermediate financial management", 9<sup>th</sup> edition, ELM street publishing services, Inc.
- [21]. Fazzari, M. and Petersen, C. 1993. "Working capital and fixed investment: new evidence on financing constraints", RAND Journal of Economics Vol. 24, No. 3, PP.328-342.
- [22]. Ganesan, V. 2007. "An analysis of working capital management efficiency in Telecommunication equipment industry", Rivier academic journal, volume 3, number 2.
- [23]. Ghosh, S. and Maji, S. 2004. "Working Capital Management Efficiency: A Study on the Indian Cement Industry", The Management Accountant, 39(5), 363- 372.
- [24]. Gill, A., Bigger N. and Mathur, N. 2010. "The relationship between working capital management and profitability evidence from the United States", Business and Economics Journal, Volume 2010: BEJ-10.
- [25]. Glancey, K. 1998. "Determinants of growth and profitability in small entrepreneurial firms", International journal of Entrepreneurial Behavior and Research, 4(1), 18-27.
- [26]. Gujarati, D. 2004. "Basic Econometrics", 4<sup>th</sup> edn., McGraw-Hill, USA.
- [27]. Hair, J., Black, W., Babin, B., Anderson, R. and Tatham, R. 2006. "Multivariate Data Analysis", 6<sup>th</sup> ed., New Jersey: Pearson Education.
- [28]. Hoy, F., McDougall, P. and D'Souza, D. 1992. "Strategies and environments of high growth firms", in D.L. Sexton and J.D. Kasarda (eds.), the state of the art of entrepreneurship, Boston: PWS-Kent, 341-357.
- [29]. Hussain, A., Farooq, U. and Khan, U. 2012. "Aggressiveness and conservativeness of working capital: A case of Pakistani manufacturing sector", European journal of scientific research.
- [30]. Kennedy, P. 2008. "A Guide to Econometrics", 6<sup>th</sup> edn., Blackwell Publishing, Malden.
- [31]. Lasher, R. 2006. "Practical Financial Management", 5<sup>th</sup> ed., Thomson learning academic resource center.
- [32]. Magpayo, L. 2011. "Effect of Working Capital Management and Financial Leverage on Financial Performance of Philippine Firms", De La Salle University, Philippines.
- [33]. Majumdar, K. 1997. "The impact of size and age on Firm Level Performance: Some Evidence from India", Review of Industrial organization 12:231-241, Kluwer Academic Publishers. Printed in the Netherlands.
- [34]. Malhotra, N. 2007. "Marketing Research: An applied Orientation", 5<sup>th</sup> ed., PHI, New Delhi.
- [35]. Morawakage, S. and Lakshan, I. 2007. "Determinants of profitability underlining the working capital management and cost structure of Sri Lankan Companies".
- [36]. Moussawi, R., LaPlante, M., Kieschnick, R. and Baranchuk, N. 2006. "Corporate working capital management: Determinants and Consequences".

- [37]. Moyer, R., Mcguigan, J., and Kretlow, W. 1995. "Contemporary Financial Management", West Publishing Co, Cincinnati, Ohio.
- [38]. Mulualem, M. 2011. "The impact of working capital management on firms' profitability", Master thesis, Addis Ababa University, Ethiopia.
- [39]. Napompech, K. 2012. "Effects of working capital management on the profitability of Thai listed firms", International journal of trade, economics and finance, vol.3, No.3
- [40]. Nuru, M. 2012. "Effect of Working Capital Management Policy on Firms' Profitability: Evidence from Manufacturing PLCs of Addis Ababa", Master thesis, Addis Ababa University, Ethiopia.
- [41]. Nyamao, R., Patrick, O., Martin, L., Odondo, J. and Simeyo, O. 2012. "Effect of working capital management practices on financial performance: a study of small scale enterprises in Kisii south district, Kenya", African journal of business management 6(18)-5807-5817.
- [42]. Padachi, K. 2006. "Trends in Working Capital Management and its Impact on Firms Performance", an Analysis of Mauritian Small Manufacturing Firms. International Review of Business Research Papers, 2(2), 45 -58.
- [43]. Penrose, E. 1959. "The Theory of the Growth of the Firm", Oxford: Basil Blackwell.
- [44]. Preve, A. and Allende, S. 2010. "Working Capital Management", Oxford University Press, Inc., New York.
- [45]. Quayyum, T. 2011. "Effects of Working Capital Management and Liquidity: Evidence from the Cement Industry of Bangladesh", Journal of Business and Technology (Dhaka), PP37-47.
- [46]. Raheman, A., Afza, T., Qayyum, A. and Bodla, A. 2010. "Working Capital Management and Corporate Performance of Manufacturing sector in Pakistan", International journal of finance and economics.
- [47]. Raheman, A. and Nasr, M. 2007. "Working capital management and profitability-Case of Pakistani firms", International review of business research papers vol.3 pp.279-300.
- [48]. Ramachandran, A. and Janakiraman, M. 2006. "The Relationship between Working Capital Management Efficiency and EBIT", Managing Global Transitions 7(1);PP. 61-74.
- [49]. Reid, G. 1995. "Early life-cycle behaviour of micro-firms in Scotland", Small Business and Economics, 7, 89-95.
- [50]. Sen, M. and Oruc, E. 2009. "Relationship between Efficiency Level of Working Capital Management and Return on Total Assets in ISE", International Journal of Business and Management, 4(10), 109-114.
- [51]. Smith, K.1980. "Profitability versus Liquidity Tradeoffs in Working Capital Management", in Readings on the Management of Working Capital, Ed. K. V. Smith, St. Paul, West Publishing Company, pp. 549-562.
- [52]. Sundar, N. 2012. "Working Capital Management and Finance", Economic and Political Weekly, Vol. 15, pp. M25+M27-M31.
- [53]. Valipour, H., Moradi J. and Fatemeh D. 2012. "The Impact of Company Characteristics on Working Capital Management", Journal of Applied Finance & Banking, vol.2, No.1, pp. 105-125.
- [54]. Watson, D. and Head, A. 2007. "Corporate Finance Principles and Practice", 4<sup>th</sup> ed., Pearson Education Limited, United Kingdom.
- [55]. Williamson, O. 1985. "The Economic Institutions of Capitalism, Firms, Markets and Relational Contracting", New York: Free Press.

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