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## Impact of Working Capital Management on Small and Medium Enterprises' Performance in Nigeria

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### **Abstract:**

*Working capital management is every important in measuring and balancing between risk and efficiency of firm's performance. Firms has experienced various trend in ensuring the survival of the business in short and long term. This study measures the impact of working capital management on small and medium enterprises' performance in Nigeria, Osun State as a focus area for the period 2010-2014 by using firm by firm statement of financial position and income statement. This is done by calculating return on assets as a tool to measure firms' performance in Nigeria. Data were analysed through the use of ordinary least square method to test the hypothesis formulated. Our findings indicate a mixed effect of WCM on performance. It was concluded that account payables period, cash conversion cycle and net trading cycle has positive effect on performance. Account receivables period and inventories turnover in days has negative relationship with performance.*

**Keywords:** Working Capital, Performance and SMEs'

### **1. Introduction**

Organizational survival is not certain despite companies' earning profit unless they meet their short term obligation. The main focus of corporate finance are three decision processes: capital structure decisions, capital budgeting decisions, and working capital management (WCM) decisions. Working capital is considered a life giving force for any economic unit and the most important function of corporate management. Working capital does not only affect profit making organizations but also non-profit making organizations.

According to Mukhopadhyay (2004), working capital is the most crucial factor for maintaining liquidity, survival, solvency and profitability of businesses across any country. There has been and there is still growing interest in the investigation of WCM and performance of firms (Kargar & Blvemerthat, 1994; Wang, 2002; Deloof, 2003, Rahemar & Nasr, 20007 and Javid, 2014)

If WCM is not given due consideration, firms are likely to fail and face bankruptcy (Karga & Blvementhel, 1994 and Javid 2014). The importance of WCM efficiency is inevitable because it is attached to liquidity, survival, solvency and profitability of firms (Javid, 2014 and filbeck & Kweger, 2005).Eljelly (2014) states that WCM is the most important area for comparison of liquidity and profitability among firms.

SME's are viewed as essential elements of any healthy economy especially in developing countries like Nigeria. It is viewed to promote enterprise and culture which in turn leads to job creation within the economy. SME is gaining widespread recognition in Nigeria due to diversification of the economy from crude oil to other sectors. Storey (1994) argued that SME constitute majority of enterprises in all the economies in the world. Likewise, the large member of failed businesses (SME) have been as a result of inadequate plan and control by the financial manager towards the current assets (CA) and current liability (CL)(Smith, 1973 and Javid, 2014). Different scholars have carried out various research on SME among which Atul (2000), found that SME often lack adequate resources to efficiently manage their WCM. Pike & Pike (1987) and Padachi (2006) argued that efficient management of working capital is most important to survival, growth and profitability of SME firms.

SME's firms and large firms are different from one another due to the effects of WCM. Consequently, it might affect the performance of one firm compared to the other. This paper's focus is on determining the effort of WCM on SME performance in Nigeria.

Various authors have carried out research in the United Kingdom, Spain, Pakistan, Kenya. In Africa, especially in Nigeria, most studies have limited their research to a specific area. Due to insufficient evidence on WCM and SME's performance in Nigeria, provides a strong motivation for evaluating WCM and SME's performance in details.

This study focus on evaluating the impact of WCM on the SME's performance in Nigeria, based on profitability and shareholder value.

The next section is as follow; section 2 literature review, section 3 methodology, section 4 discussion of findings, section 5 conclusion and recommendation.

## 2. Literature Review

### 2.1. Definition

Working capital is the difference between current assets and current liabilities (Adeniji, 2008). In order to ensure working capital is sustainable successful operation of any organization, working capital management need to be improved.

Working capital management has been defined by various author. According to Eljelly (2004), management of working capital is essential because it eliminate the risk of inability to meet short term obligations and avoid excessive investment in the assets. Filbesck and Krueger, (2005) states that success of any business depend on the effectively management of inventories, receivables and payables. Afza and Nazir (2009), continuous management of working capital can assist firms to balance between risk and efficiency. WCM simply means management of current assets (receivables, Inventories) and current liabilities (Payables).

Firms most especially, small and medium firms, faces difficulties in the management of working capital (Kargar and Blumenthal, 1994).

### 2.2. Empirical Studies

Deloof (2003) used a sample of 1,009 large Belgian non-financial firms for a period of 1992-1996. He discovered that there is significant negative relationship between gross operating income and the number of days' accounts receivable, inventories and accounts payable of Belgian firms. He suggests that managers can increase corporate profitability by reducing the number of day's accounts receivable and inventories.

Eljelly (2004) researched on the relationship between profitability and WCM using 27 Saudi companies from three non-financial sectors for the period 1996-2000. He found that WCM are significant and has negative relationship with profitability.

Falope and Ajilore (2009) using a sample of 50 Nigerian quoted non-financial firms for the period 1996 -2005, found a significant negative relationship between net operating profitability and the average collection period, inventory turnover in days, average payment period and cash conversion cycle for a sample of fifty Nigerian firms listed on the Nigerian Stock Exchange. Furthermore, they found no significant variations in the effects of working capital management between large and small firms.

From the research of Khan et al (2012) which is carried out to investigate the effect of working capital management on profitability. They used a sample of 92 Pakistani firms from textile sector for the period 2001 to 2008. The findings of the study show an existence of a moderate risk-return trade off in between profitability and liquidity. Also, working capital management has significant impact on profitability regarding to textile sector of Pakistan. This is not in line with the findings of Raheman and Nasr (2007) which established a significant and negative relationship between profitability and all WCM components based on a study of ninety-four (94) listed firms in Pakistan.

Gakure et al. (2012) examined the relationship between WCM and performance of manufacturing firms listed at the Nairobi Securities Exchange (NSE). From a sample of 18 companies at the NSE. They found out that there is a strong negative relationship between firm's performance and liquidity of the firm.

Javid (2014), using 54 SMEs listed on Karachi stock exchange for a period of five years (2006-2010) discovered that SMEs with shorter inventory holding period, shorter accounts receivable period and shorter accounts payable period are more profitable and create value. He later concluded that WCM has a perceptible effect on performance of firms.

## 3. Methodology

The purpose of this study is to investigate the impact of WCM and SME'S performances in Nigeria with the use secondary data.

The data used in this study was obtained from audited financial statement of respective firms for the period of 2010-2014. Twenty-eight SME firms will be use in total. In order to measure firm's performance, return on assets will be use.

### 3.1. Model Specification

The model designed to determine the effect of WCM on SME's performance is stated below;

$$ROE = F(WCM, CR, LOS, LTA, NPR, EFF, GE) \dots \dots \dots \text{eqn. (1)}$$

As discussed earlier, variables are classified into dependent, independent and control variable, the table below shows the summary of variable.

| VARIABLE                     | MEASUREMENT   | ABBREVIATION |
|------------------------------|---|--------------|
| <b>DEPENDENT VARIABLE</b>    |   |              |
| Return on assets             | (Profit before tax/total assets) *100                               | ROA          |
| <b>INDEPENDENT VARIABLES</b> |   |              |
| Working capital management   | It constitutes fine variable which are ARP, ACP, CCC, NTC, and ITID | WCM          |
| Average collection period    | Net sales/ Account Receivable                                       | ARP          |
| Average payable period       | Net sales/ Accounts payable   | APP          |
| Cash conversion cycle        | ACP + ITID - APP  | CCC          |
| Net trading cycle            | Net working capital /Net sales/                                     | NTC          |
| Inventory turnover is days   | Cost of goods sold/ Inventory                                       | ITID         |
| <b>CONTROL VARIABLES</b>     |   |              |
| Log of Sales                 | Log(Sales)  | LOS          |
| Size                         | Log (Total Assets)  | LTA          |
| Current Ratio                | Current assets/current liabilities                                  | CR           |
| Net Profit Ratio             | (Profit before Tax/ Sales) *100                                     | NPR          |
| Efficiency                   | Sales/Total Assets  | EFF          |
| Earnings                     | Sales   | GE           |

Table 1: Summary of Variable and Calculation

3.2. Research Hypothesis

In order to examine the relationship between working capital management and SME's performance, the following null hypotheses are tested:

- H<sub>1</sub>: there is no relationship between working capital management and profitability
- H<sub>2</sub>: there is no relationship between efficiency and firm's performance.
- H<sub>3</sub>: Profitability has no relationship with firm's performance.

In econometric model;

$$ROE_{IT} = \alpha + \beta_1 WCM_{IT} + \beta_2 CR_{IT} + \beta_3 LA_{IT} + \beta_4 DR_{IT} + \beta_5 GRTH_{IT} + \mu_{IT} \dots \dots \dots \text{eqn. (2)}$$

where 'i' denotes the nth firm (i=1 to 28), and the subscript t denotes the tth year (t=1 to 5),  $\mu$  is the error term. For model estimation, we need to determine the where there is correlation between the variables. Panel data test is one of fixed effect or random effect model. To determine which of the model (fixed effect model or random effect model) to choose from, Hausman test will use. If the null hypothesis is accepted, random effect will be use, if rejected, fixed effect will be use. We have used EVIEWS the above model.

4. Empirical Analysis

4.1. Pre- Test Analysis

From table 2, it shows the strength of relationships between variables. It indicates the direction of variables (either positive or negative values). A positive correlation is show between the independent variables and performance while a mix reaction was shown under the control variable (where only the current ratio has negative correlation on performance and others shows a positive correlation with performance). The purpose of correlation analysis is to show whether the variables are multi-co linearity. Form the correlation analysis, there is no evidence of multi-co linearity, which means the test do not rightly reflect a causal relationship.

|      |           |           |           |           |           |           |           |           |           |           |          |          |
|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|
| ROA  | 1.000000  |           |           |           |           |           |           |           |           |           |          |          |
| ARP  | 0.209635  | 1.000000  |           |           |           |           |           |           |           |           |          |          |
| APP  | 0.250069  | -0.030310 | 1.000000  |           |           |           |           |           |           |           |          |          |
| ITID | 0.025157  | 0.031684  | -0.006873 | 1.000000  |           |           |           |           |           |           |          |          |
| CCC  | 0.313845  | 0.618972  | 0.668895  | 0.394249  | 1.000000  |           |           |           |           |           |          |          |
| NTC  | 0.163738  | 0.115214  | -0.023240 | 0.175185  | 0.122706  | 1.000000  |           |           |           |           |          |          |
| LOS  | 0.433562  | 0.107889  | 0.135700  | 0.125881  | 0.209169  | 0.259185  | 1.000000  |           |           |           |          |          |
| CR   | -0.055006 | -0.019543 | 0.226375  | -0.093585 | 0.108570  | -0.150690 | -0.066659 | 1.000000  |           |           |          |          |
| LTA  | 0.138722  | -0.112403 | 0.081179  | -0.037334 | -0.028673 | 0.003467  | 0.718804  | 0.137794  | 1.000000  |           |          |          |
| NPR  | 0.485913  | -0.087548 | 0.090385  | -0.052984 | -0.012642 | -0.055483 | 0.123828  | 0.051870  | 0.275932  | 1.000000  |          |          |
| EFF  | 0.472606  | 0.409949  | 0.067360  | 0.206020  | 0.382020  | 0.443288  | 0.563654  | -0.172126 | -0.021355 | -0.170979 | 1.000000 |          |
| GE   | 0.516476  | 0.187331  | 0.040514  | 0.041953  | 0.161504  | 0.243338  | 0.715069  | -0.033159 | 0.509229  | 0.061004  | 0.610458 | 1.000000 |

Table 2: Correlation Coefficient

Source: Calculation from the financial statement of each SME's

Table 3 shows a pre-test analysis (descriptive statistic) of data obtained for the sample period 2010 to 2014 from small and medium firm. it shows the mean, median maximum and minimum for the variables; ROA, ARP, APP ITID, CCC, NTC, LOS, CR LTA, NPR, EFF AND GE. The kurtosis measures the peakedness of the variables. Almost all the variables show a high peak (higher than three) except LOS which shows low peak since it is less than three. Skewness determine the probability distribution of a random variable

relative to the mean. It shows almost all the variables are positive except for LOS which has a negative value. Since a negative skewness indicates, in the tail, the right hand side is shorter than the left hand side while a positive skewness means that the left hand side is shorter than the right hand side. Jarque-Bera test for the goodness of fit in a data distribution for the purpose of ensuring that skewness and kurtosis are normally distributed. LOS is not normally distributed at 1%, 5% and 10% level of significance while other variables are normally distributed.

|              | ROA       | ARP      | APP      | ITID      | CCC      | NTC       | LOS       | CR       | LTA      | NPR       | EFF      | GE       |
|--------------|-----------|----------|----------|-----------|----------|-----------|-----------|----------|----------|-----------|----------|----------|
| Mean         | 20.04823  | 116.7823 | 64.33086 | 54.19924  | 235.3124 | 25.94668  | 7.504690  | 4.590514 | 7.184481 | 7.456027  | 3.663123 | 95242841 |
| Median       | 11.84517  | 36.19881 | 9.749493 | 11.43058  | 69.37331 | 10.29177  | 7.627864  | 2.439994 | 7.177101 | 5.694890  | 1.885414 | 42513420 |
| Maximum      | 137.2701  | 2010.188 | 2627.858 | 1401.781  | 2693.105 | 298.7221  | 9.025635  | 24.48096 | 8.433285 | 38.93332  | 22.18746 | 1.06E+09 |
| Minimum      | -58.47648 | 1.633467 | 0.942511 | -0.443415 | 4.588643 | -142.7963 | 6.023343  | 0.203365 | 5.923112 | -25.04032 | 0.149051 | 1055220. |
| Std. Dev.    | 26.88857  | 281.5846 | 309.6769 | 170.0123  | 448.4614 | 62.00134  | 0.709945  | 5.143442 | 0.564286 | 10.67731  | 4.032080 | 1.59E+08 |
| Skewness     | 1.521103  | 4.937302 | 7.722391 | 6.813851  | 3.605809 | 2.444865  | -0.097279 | 2.116832 | 0.035991 | 0.499620  | 2.252291 | 3.725018 |
| Kurtosis     | 8.026295  | 30.33826 | 63.67427 | 53.55969  | 17.22177 | 12.18972  | 1.989367  | 7.310982 | 2.841769 | 4.510884  | 9.408750 | 20.56002 |
| Jarque-Bera  | 109.3091  | 2675.479 | 12413.04 | 8682.988  | 805.1766 | 343.1412  | 3.354237  | 115.6101 | 0.095692 | 10.39063  | 194.3172 | 1152.215 |
| Probability  | 0.000000  | 0.000000 | 0.000000 | 0.000000  | 0.000000 | 0.000000  | 0.186912  | 0.000000 | 0.953281 | 0.005542  | 0.000000 | 0.000000 |
| Sum          | 1523.666  | 8875.458 | 4889.145 | 4119.142  | 17883.75 | 1971.948  | 570.3564  | 348.8791 | 546.0206 | 566.6580  | 278.3973 | 7.24E+09 |
| Sum Sq. Dev. | 54224.66  | 5946742. | 7192483. | 2167815.  | 15083819 | 288312.5  | 37.80166  | 1984.125 | 23.88137 | 8550.375  | 1219.325 | 1.89E+18 |
| Observations | 76        | 76       | 76       | 76        | 76       | 76        | 76        | 76       | 76       | 76        | 76       | 76       |

Table 3: Descriptive Analysis

Source: Calculation from the financial statement of each SME's

The P-value shown as \* indicates significance at \*\*\* for 1%, \*\* for 5% and \* for 10%

Note: The sample period, 2010 to 2014 is used in the calculation of summary statistics for the 28 selected SMEs.

#### 4.2. Regression Analysis

As discussed above, the objective of this study is to identify the key variable relating to WCM that influence performance (measure by ROA) of SMEs' in Nigeria. The R-Square shows 56.67%, 54.85%, 41.93%, 64.32% and 40.38% variation in the dependent variable is explained by all independent variables in model 1,2,3,4 and 5 respectively (see table 4). The F-Statistic and Probability shows that all the variables (independent and control variables) jointly has significant effect on performance. Under APP and CCC, will reject the null hypothesis since it has effect on performance at 10% level of significant. The control variables (LOS, LTA, NPR and GE) has an effect on performance at 10% and 5% level of significant. This means the null hypothesis will be reject and alternate hypothesis will be accepted. Since panel data is main about choosing between fixed effect and random effect, the pooled regression will not be analysis in full.

From Table 5, The R-Square shows 85.48%, 79.09%, 74.29%, 87.32% and 74.39% variation in the dependent variable is explained by all independent variables in model 1,2,3,4 and 5 respectively. Adjusted R-square indicates 78.10%, 66.92%, 62.47%, 78.87% and 63.23% variation in dependent variable is explained by all independent variables in model (1 to 5). The means that the model is good for decision since more than half on the variables has been explained. Average receivable period has negative relationship with performance indicating that the sooner firms receives their money the better it improves performance which is also a similar result found in the research work of Gul et. al., (2013), Raheman et al., (2010) and Pedro and pedro (2007). Performance will also improve if CCC is minimize. It implies that companies can create value for the shareholder if cash conversion is maintained to the minimum. This result is in line with finding of Gul et al., (2013) and Karaduman et al., (2011) and contradict the finding of Javid (2014) which state CCC is positively correlated to Performance. ITID is negatively related to performance while NTC is positively related to performance of a firm. The result shows that the lower the days of debt resettlement (APP) the better for the firm's (SMEs)' performance. This is in line with the of work of Javid (2014) and Pedro and Pedro (2007) and in contrary with the finding of Gul et al., (2013) and Deloof, (2003) who find positive relationship between APP and Performance.

Form the regression table (fixed effect), it indicates that working capital measured by ARP, APP, ITID, CCC, NTC and CR has no significant effect on performance at 10% level of significance. Under efficiency, it has no significant effect on performance expect for model 2 which is significant at 10% level of significance. Profitability, Size and Growth are positively significant to firm's performance at 1%, 5% and 10% level of significance.

Durbin Watson test is used for testing presence of auto-correlation (if it falls with the upper and lower value) which has a value of 1.93, 2.53, 2.09, 2.06 and 1.99 for model 1,2,3,4 and 5 respectively. The DW tables shows the upper and lower value as 1.31 and 1.68. This means that there is no presence of auto-correlation since the DW calculated do not fall within the DW tabulated.

Table 6, The R-Square shows 62.38%, 52.78%, 37.99%, 66.78% and 37.28% variation in the dependent variable is explained by all independent variables in model 1,2,3,4 and 5 respectively. Adjusted R-square indicates 59.38%, 48.79%, 33.99%, 63.36% and 33.09% variation in dependent variable is explained by all independent variables in model (1 to 5). The means that the model is good for decision since more than half on the variables has been explained. Average receivable period has negative relationship with performance indicating that the sooner firms receives their money the better it improves performance which is also a similar result found in the research work of Gul et. al., (2013), Raheman et al., (2010) and Pedro and pedro (2007). Performance will improve if CCC is increases. It implies that companies can create value for shareholder if cash conversion is maintained to the maximum. This result is in line with finding of Javid (2014) and contradict the finding of Gul et al., (2013) and Karaduman et al., (2011) which state CCC is negatively correlated to Performance. ITID is negatively related to performance while NTC is positively related to

performance of a firm from our finding. However, the result shows the higher the days of debt resettlement (APP) the better for the firm's (SMEs') performance. This is in line with the work of Gul et al., (2013) and Deloof, (2003) and in contrary with the finding of Javid (2014) and Pedro and Pedro (2007) that found positive relationship between APP and Performance.

From the regression table (random effect), it indicates that working capital measured by ARP, APP, ITID, CCC and NTC has no significant effect on performance at 10% level of significance. Under current ratio, it is significant in model 1 at 10%, efficiency has significant effect on performance only in model 2 at 10% level of significance. Profitability, Size and Growth are positively significant to firm's performance at 1%, 5% and 10% level of significance.

Durbin Watson test is used for testing presence of auto-correlation (if it falls with the upper and lower value) which has a value of 1.35, 2.00, 1.62, 1.23 and 1.57 for model 1,2,3,4 and 5 respectively. The DW tables shows the upper and lower value as 1.31 and 1.68. This means that there is no presence of auto-correlation since it DW calculated did not fall with the lower and upper value of DW tabulated.

#### 4.3. Hausman Test

In carrying determining whether fixed effect or random effect is to be accepted, the test is carried out. From the Test (see table 7), the fixed effect result is to be accepted at 5% level of significance.

### 5. Conclusion and Recommendation

#### 5.1. Conclusion

The main purpose of working capital management in any organization is to manage short term funds in other to ensure day to day business running of a firm. The study investigates the impact of WCM on SME's performance in Nigeria. The sample period used is from 2010 to 2014 for 28 SMEs in Osun State. In this research, WCM measures by Account receivable period, account payable period, cash conversion circle, net trade cycle and inventory turnover in days on the performance. Current ratio, growth, efficiency, gross earnings and profitability have been used as control variables. The result from the panel data regression indicate that ARP and ITID has a negative effect on performance while positive relationship is found in APP, CCC and NTC to performance. Under the control variables we discovered that, firm sizes, growth in sales, Profitability and earning all affect performance of SME firms. Efficiency and Current ratio have substantial effect on performance.

#### 5.2. Recommendation

The following recommendation are made from the finds of this research work;

Management small and medium enterprises should ensure delay in payment of goods or services or to the creditors because it tends to improve the performance of the firm

Receiving of payment from debtor should be focus on to ensure adequate and fast payment since delay in payment have negative effect on the performance of SMEs'

Also Policy maker should consider differences in firm's size, growth in sale and earning before implementing any rules and regulations so as to ensure made rules and regulations suit SME firms.

### 6. References

- i. Adeniji, A.A., 2008. Management Accounting. 4th Edn., El-Toda Venture Limited, Lagos, Nigeria.
- ii. Deloof, M. (2003). Does Working Capital Management Affects profitability of Belgian Firms? *Journal of Business Finance & Accounting*. 30(3) & (4), 0306-686X
- iii. Eljelly, A. M. A. (2004). Liquidity-profitability tradeoff: An empirical investigation in an emerging market. *International Journal of Commerce and Management*, 14(2), 48-61.
- iv. Falope, O.I. and Ajilore, T.M., (2005). Working Capital Management and Corporate Profitability: Evidence from panel data analysis of selected quoted companies in Nigeria. *Res. J. Bus. Manage.*, 3:73-84.  
<http://scialert.net/abstract/?doi=rjbm.2009.73.84> (accessed 20.2.2016)
- v. Filbeck, G. and T. M. Krueger, (2005). An Analysis of Working Capital Management results across Industries. *American Journal of Business*. 20(2), 11-18
- vi. Gakure, R., Cheluget, K.J. Onyango, J.A, & Keraro, V. (2012). Working capital management and profitability of manufacturing firms listed at the Nairobi stock exchange. *Prime Journal of Business Administration and Management (BAM)*, 2(9), 680-686.
- vii. Gul, Sajid et al. "Working Capital Management and Performance of SME Sector". *European Journal of Business and Management* 5.1 (2013): 60-68. Web. 30 Apr. 2016.
- viii. Javid, Snober. "Effect Of Working Capital Management On SME'S Performance In Pakistan". *European Journal of Business and Management* 6.12 (2014): 206-220. Web. 30 Apr. 2016.
- ix. Karaduman Hasan Agan, Halil Emre Akbas, Arzu Ozsozgun Caliskan and Salih Durer (2011). "The Relationship between Working Capital Management and Profitability: Evidence from an Emerging Market". *International Research Journal of Finance and Economics*, ISSN 1450-2887, Issue 62

- x. Kargar, J. and R. A. Blumenthal, (1994). Leverage Impact of Working Capital in Small Businesses. TMA Journal. 14(6), 46-53.
- xi. Khan et al (2012): "Working Capital Management and Firm's Profitability in Pakistan: A Disaggregated Analysis"; African Journal of Business Management 6/9, 3253-3261. [www.academicjournals.org/AJBM](http://www.academicjournals.org/AJBM) Retrieved on 23rd March 2012
- xii. Mukhopadhyay, D (2004), Working Capital Management in Heavy Engineering Firms – A Case Study, myicwai. Com. Knowledge bank /fm48
- xiii. Nazir, Mian Sajid and Talat Afza. "Impact of Aggressive Working Capital Management Policy On Firms' Profitability". Papers.ssrn.com. N.p., 2009. Web. 30 Apr. 2016.
- xiv. 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
- xv. Pedro, J.G and Pedro, M. (2007):"Effects of working capital management on SME Profitability", International journal of managerial finance, 3(2), pp. 164- 177
- xvi. Raheman, A. and M. Nasr, (2007). Working Capital Management and Profitability – Case of Pakistani Firms. International Review of Business Research Papers. 3 (2), 275 - 296
- xvii. Raheman, A., Afza T., Qayyum A., Ahmed M. (2010) 'Working Capital Management and Corporate Performance of Manufacturing Sector in Pakistan' In: International Reserach Journal of Finance and Economics. 47 151-163. <http://www.citilahore.edu.pk/papers/252-8589041995144150808.pdf> [accessed 25.2.2016]
- xviii. Smith, K., 1973. State of the art of working capital management. Financial Management Association International, 2(3), 50-55
- xix. Wang, Y., 2002. Liquidity management, operating performance, and corporate value: evidence from Japan and Taiwan. Journal of Multinational Financial Management, 12, 159-169.

## Appendix

| Variables                | ROA                 | ROA                 | ROA                 | ROA                 | ROA                  |
|--------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| <b>ARP</b>               | -0.2348<br>(0.8149) | -                   | -                   | -                   | -                    |
| <b>APP</b>               | -                   | 1.9775<br>(0.0513)  | -                   | -                   | -                    |
| <b>ITID</b>              | -                   | -                   | -0.7844<br>(0.4346) | -                   | -                    |
| <b>CCC</b>               | -                   | -                   | -                   | 1.886<br>(0.0632)   | -                    |
| <b>NTC</b>               | -                   | -                   | -                   | -                   | 0.0476<br>(0.9622)   |
| <b>LOS</b>               | 2.4646<br>(0.0157)  | 4.9400<br>(0.0000)  | 4.5996<br>(0.0000)  | 1.7055<br>(0.0927)  | 4.1942<br>(0.0001)   |
| <b>CR</b>                | 1.4168<br>(0.1601)  | -0.1429<br>(0.8867) | 1.2509<br>(0.2139)  | -0.2678<br>(0.7897) | 1.0803<br>(0.2825)   |
| <b>LTA</b>               | -3.6979<br>(0.0004) | -4.5778<br>(0.0000) | -3.7766<br>(0.0003) | -2.6561<br>(0.0098) | -3.4881<br>(0.0007)  |
| <b>NPR</b>               | 7.5592<br>(0.0000)  | 6.1997<br>(0.0000)  | 6.0666<br>(0.0000)  | 7.2519<br>(0.0000)  | 5.9104<br>(0.0000)   |
| <b>EFF</b>               | 0.1682<br>(0.8668)  | -2.3663<br>(0.0203) | -0.0655<br>(0.9479) | 0.3125<br>(0.7557)  | -0.0287<br>(0.97772) |
| <b>GE</b>                | 3.6979<br>(0.0019)  | 2.5246<br>(0.0135)  | -0.1285<br>(0.8980) | 3.4531<br>(0.0010)  | -0.0177<br>(0.9859)  |
| <b>Constant</b>          | 2.5978<br>(0.0110)  | 1.2851<br>(0.2023)  | 0.1393<br>(0.8895)  | 1.9126<br>(0.0600)  | 0.3347<br>(0.7385)   |
| <b>F.Statistics</b>      | 16.4398***          | 14.4062***          | 10.2078***          | 17.5105***          | 10.1602***           |
| <b>R-Square</b>          | 0.5667              | 0.5485              | 0.4193              | 0.6432              | 0.4038               |
| <b>Adjusted R-Square</b> | 0.5322              | 0.5105              | 0.3737              | 0.6065              | 0.3641               |
| <b>DW</b>                | 0.7969              | 1.6536              | 1.0929              | 0.9406              | 1.0411               |

Table 4: Pooled Regression

Panel data model from 2010-2014 sample size across 28 SMEs'

Parentheses '\*' indicate level of significance at 10% (\*), 5% (\*\*) and 1% (\*\*\*)

| Variables                | ROA                 | ROA                 | ROA                 | ROA                 | ROA                 |
|--------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>ARP</b>               | -0.4338<br>(0.6659) | -                   | -                   | -                   | -                   |
| <b>APP</b>               | -                   | -0.3135<br>(0.7550) | -                   | -                   | -                   |
| <b>ITID</b>              | -                   | -                   | -0.8141<br>(0.4182) | -                   | -                   |
| <b>CCC</b>               | -                   | -                   | -                   | -1.0716<br>(0.2896) | -                   |
| <b>NTC</b>               | -                   | -                   | -                   | -                   | 1.0851<br>(0.2812)  |
| <b>LOS</b>               | 3.0915<br>(0.0030)  | 4.4479<br>(0.0000)  | 2.5133<br>(0.0141)  | 3.0562<br>(0.0038)  | 2.3456<br>(0.0215)  |
| <b>CR</b>                | 1.4358<br>(0.1560)  | 0.4555<br>(0.6505)  | 0.6783<br>(0.4997)  | 1.1125<br>(0.2718)  | 0.7044<br>(0.4833)  |
| <b>LTA</b>               | -4.2424<br>(0.0001) | -4.0047<br>(0.0002) | -3.6280<br>(0.0005) | -2.4020<br>(0.0205) | -3.4473<br>(0.0009) |
| <b>NPR</b>               | 4.9416<br>(0.0000)  | 4.2060<br>(0.0001)  | 4.1655<br>(0.0001)  | 3.7607<br>(0.0005)  | 4.1950<br>(0.0001)  |
| <b>EFF</b>               | 0.3853<br>(0.7013)  | -2.4627<br>(0.0168) | 0.5599<br>(0.5772)  | 0.8220<br>(0.4154)  | 0.8602<br>(0.3923)  |
| <b>GE</b>                | 2.5718<br>(0.0125)  | 2.8204<br>(0.0066)  | -0.2362<br>(0.8139) | 2.3337<br>(0.0241)  | -0.4371<br>(0.6633) |
| <b>Constant</b>          | 2.6824<br>(0.0093)  | 1.9499<br>(0.0561)  | 2.3891<br>(0.0194)  | 0.1791<br>(0.8587)  | 2.3251<br>(0.0227)  |
| <b>F.Statistics</b>      | 11.5900***          | 6.5342***           | 6.2884***           | 10.3305***          | 6.6652***           |
| <b>R-Square</b>          | 0.8548              | 0.7909              | 0.7429              | 0.8732              | 0.7439              |
| <b>Adjusted R-Square</b> | 0.7810              | 0.6699              | 0.6247              | 0.7887              | 0.6323              |
| <b>DW</b>                | 1.9252              | 2.5309              | 2.0907              | 2.0578              | 1.9891              |

Table 5: Fixed Effect

Panel data model from 2010-2014 sample size across 28 SMEs'

Parentheses '\*' indicate level of significance at 10% (\*), 5% (\*\*) and 1% (\*\*\*)

| Variables                | ROA                 | ROA                 | ROA                 | ROA                 | ROA                 |
|--------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>ARP</b>               | -0.0962<br>(0.9236) | -                   | -                   | -                   | -                   |
| <b>APP</b>               | -                   | 1.2941<br>(0.1992)  | -                   | -                   | -                   |
| <b>ITID</b>              | -                   | -                   | -0.8407<br>(0.4025) | -                   | -                   |
| <b>CCC</b>               | -                   | -                   | -                   | 1.2349<br>(0.2211)  | -                   |
| <b>NTC</b>               | -                   | -                   | -                   | -                   | 0.6860<br>(0.4942)  |
| <b>LOS</b>               | 2.7772<br>(0.0067)  | 5.2966<br>(0.0000)  | 3.6746<br>(0.0004)  | 2.2443<br>(0.0281)  | 3.3610<br>(0.0011)  |
| <b>CR</b>                | 1.9248<br>(0.0575)  | 0.4286<br>(0.6693)  | 0.9133<br>(0.3633)  | 0.8667<br>(0.3892)  | 0.8984<br>(0.3710)  |
| <b>LTA</b>               | -4.0174<br>(0.0001) | -4.8441<br>(0.0000) | -3.5101<br>(0.0007) | -3.0611<br>(0.0032) | -3.2993<br>(0.0013) |
| <b>NPR</b>               | 7.0454<br>(0.0000)  | 6.0248<br>(0.0000)  | 5.4448<br>(0.0000)  | 7.1759<br>(0.0000)  | 5.4492<br>(0.0000)  |
| <b>EFF</b>               | 0.6687<br>(0.5055)  | -2.3809<br>(0.0206) | 0.3947<br>(0.6939)  | 0.8313<br>(0.4087)  | 0.5726<br>(0.5681)  |
| <b>GE</b>                | 3.1478<br>(0.0022)  | 2.7152<br>(0.0081)  | -0.1075<br>(0.9146) | 3.4801<br>(0.0009)  | -0.1580<br>(0.8747) |
| <b>Constant</b>          | 2.6888<br>(0.0086)  | 1.4594<br>(0.1482)  | 1.0721<br>(0.2862)  | 1.7188<br>(0.0902)  | 1.1465<br>(0.2542)  |
| <b>F.Statistics</b>      | 20.8410***          | 13.2522***          | 8.8412***           | 19.5307***          | 8.9149***           |
| <b>R-Square</b>          | 0.6238              | 0.5278              | 0.3799              | 0.6678              | 0.3728              |
| <b>Adjusted R-Square</b> | 0.5938              | 0.4879              | 0.3369              | 0.6336              | 0.3309              |
| <b>DW</b>                | 1.3532              | 2.0089              | 1.6255              | 1.2323              | 1.5727              |

Table 6: RANDOM Effect

Panel data model from 2010-2014 sample size across 28 SMEs'

Parentheses '\*' indicate level of significance at 10% (\*), 5% (\*\*) and 1% (\*\*\*)

| Correlated Random Effects - Hausman Test |                   |              |        |
|--|-------------------|--------------|--------|
| Equation: Untitled                       |                   |              |        |
| Test cross-section random effects        |                   |              |        |
| Test Summary                             | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob.  |
| Cross-section random                     | 13.242449         | 6            | 0.0393 |

Table 7: Hausman Test