IMPACT OF WORKING CAPITAL MANAGEMENT ON FIRM’S PROFITABILITY: EVIDENCES FROM TEXTILE SECTOR OF PAKISTAN

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ABSTRACT:  
This study shows the link between the working capital management and profitability with the indirect effect of management policies effectiveness under the context of Pakistan textile industry for which data have been taken from period 2006-2012. This study solve the problem related market share of textile firms’ of Pakistan in the global market while the demand for textile products are increasing day by day. The convenience sampling technique is used for the selection of sample of our study which consists of 9 textile firms. For data analysis we have adopted the methodology of Hayajneh and Yassine (2011) which they have used to determine the WC performance of Jordanian manufacturing firms and devise the similar model for profitability. The result shows that the WCM and Profitability has a negative relationship with each other. While, the effective management policies have positive impact on the relationship between WCM and Profitability. This study is useful for financial managers for getting the better economic position and for attaining the short term miles stones of a firm as well as long term goals of business.

Key Words: Working capital management, Current ratio, Cash conversion cycle, Return on assets, Net profit margin, Management policies.

SECTION I: INTRODUCTION  
Pakistan Textile Industry is the largest industry of Pakistan. This industry is ranked 8th largest exporter of textile products in Asia. In the context of investment of this sector, it contributes to US $9.6 billion in year of 2010-2011. It contributes 46% to the total manufacturing and 85% of the GDP collected from manufacturing sector other than agriculture, 38% of the total labor force is employed in this sector and its market capitalization is 5% of the total market capitalization (GOP 2011, TDAP). The corporate finance is an area of immense importance for business organizations. The decision made by financial managers significantly affects the overall profitability of business as well as interest
of shareholders. The firm’s financial management policies compose of very important decisions including short term or long term financing.

The short term financing that company needs for conducting daily activities is working capital management (WCM). WCM is necessary to maintain the balance between profitability and liquidity of a firm (Eljelly, 2004). WC of a firm comprises on Current Assets (Horne and unchowitz, 2000). According Raheman and Nasr 2007, WCM directly affects the profitability and liquidity of firm. Generally Current Assets of a firm include Cash, A/R, and Inventory items of firms. Kargal and Blue manthal (1994) state that the profitability and liquidity tradeoff is necessary for firms because it may become the cause of the bankruptcy. This tradeoff is only showed by WCM, so, the significance of WCM is irrefutable for firms (Filbeek and Krueger, 2005). WCM is the life function of the corporate Management. Shin and Soenen (1998) argued that the efficient WCM is most important to create the value for the shareholders while Smith (1997) emphasize that liquidity and profitability are the important goods of WCM.

Basically in this research, we have seen the effect of cash conversion cycle (CCC) with respect to working capital and see the impact of CCC on profitability. And CCC is the independent variable in our study and profitability is the dependent variable. While the CCC is the amount of time a firm’s resources are tied up. The goal is to minimize the length of CCC for profitability. The moderate variable of our research is the management policies of the organizations that must be effective one, to attain the specific goal or objective. According to Steven P. Robins state in his book ‘principle of management’ (9th edition) management of an organizations must have the specific policies related to the each and every issue of business that guides managers what to do for this matter? And what ways we can use for this? And which alternative decision will be best for the faced situation? Fred R. David define the management policies in his book ‘Strategy Management’ (13th edition), management policies refer to the specific guide lines, methods, procedure, rules, forms, and administrative practices established to attain the specific goals. As evident from the Jordan case, the management policy which organizations select to strengthen the relationship of the WCM and firm’s profitability.

Problem Statement

In the global market, the demand for the textile products is growing day by day. In 2005 the world market share of Pakistan industry was 2.23% but till 2010 it shrinks to 1.81% (Ahmad, 2010; Siddiqi et al, 2012. Pakistan textile sector is suffering with steady and slow growth which deteriorate day by day as evident from 2005 to 2010 and alarm the management to well manage their long run as well as short term financing (WCM) and resources but nothing has done in this respect. To improve the profitability WCM must be addressed to solve the problem of less market share. In the context of our research, it makes sense to look at how profitability behaves in relation to WC policies. This study examines the same for the textile sector and different studies mostly from the period of 1998-2011 have been included.

Research Gap

In the corporate financing literature most of the scholars focus only on the study of long term decisions, but in actual short term financial management is one of the most important affairs for financial managers (Lamberson, 1995). This article explains the relationship b/w effective and efficient WCM and firm’s profitability. The previous studies describe only the role and impact of effective long term financing decisions just as tool for economic performance of firms. WCM affects the enterprise’s profitability, risk and value (Smith, 1980; Deloof, 2003; Afza & Nazir, 2007). Vedavinayagam Ganesan (2007) found that when
the working capital management efficiency is improved by decreasing the days of working capital (DWC), there is an improvement in the profitability of the firms. This study also considers the effect of management policies on the relationship of Efficient WCM and firm’s profitability. In this study, management policies of organizations are considered as moderator factor while others take it as the independent variable and in some it is taken as the dependent variable for the successful implementation of business strategies.

**Research objectives**
To find out CCC impact on firm’s profitability.
To find out the impact of DWC on firm’s profitability.
To find out the impact of management policies on the relationship of WCM and profitability of firm.

**Significance of the Study**
As earlier said, short term financing plays vital role in the economic position of the firms of which working capital is the major part. And textile industry of Pakistan is the largest industry of Pakistan. For the prosperous in this sector WCM efficiency is very important. That’s the reason we select the listed textile firms of stock exchange from the period of 2005-2011. The results of this study will most likely be useful in understanding the dynamics of and thus, in improving WCM practices for raising or maximizing the profitability. It could help guide the financial managers towards more specialized handling of day to day operations and achieving optimal level for increased efficiency.

**SECTION II: LITERATURE REVIEW**

Many studies attempt to investigate the relationship between working capital level and firms profitability. Few studies however, investigate the impact of working capital on firms’ performance. The literature review has been arranged according to the variables.

**Working capital**

WCM is most important part of the decision taken by management that affects the Profitability of firm directly. (Haq et al, 2011) on the other side, Net working Capital (NWCM) is the excess of Current Assets (CA) over Current Liability (CL) of a firm. It tells about the strength of the business and its Liquidity Position means more WC the more Liquidity of the firm. WCM is Management of CA to meet the short term obligations of the company (Raheman and Nasr, 2007). WCM is the tool through which you meet the short term debts that fall due and it is the operating requirement which must be maintained (Mohammad and Nasr, 2010).

\[
\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}
\]

\[
\text{Current Assets} = \text{Cash} + \AR + \text{Inventory}
\]

**Cash Conversion Cycle**

Lazaridis and Tryfonidis (2006) investigated the relationship that is significant between corporate profitability, the cash conversion cycle and its components by using the sample of 131 companies listed in the Athens Stock Exchange for the period of 2001-2004. They used the following independent variables, fixed financial assets, the natural logarithm of sales, financial debt ratio, cash conversion cycle and its components – day’s inventory, days receivable and days payable. The dependent variable was profitability measured by gross operating profit. This research finding shows a negative relationship between these variable. The author concludes that companies can create more profit by handling correctly the cash conversion cycle and keeping each different component to an optimum level.
Shahid (2011) explore the effect of working capital management and profitability of textile sector of Pakistani firms for the period of 6 years from 2000-2006. He used the following model for this purpose of ordinary last squares model and fixed affect model and conclude that higher the cash conversion cycle higher the profit and through regression analysis he also concluded that average payable and average receivable have significant economic impact on ROA (return on assets).

\[ CCC = ACP + AAI - APP \]

**Working Capital and Firm’s Profitability**

Grabowsky (1976); Klamath & Khaksar (1985); Smith & Sell (1990) and Soenen (1993) found a strong relationship of employment of formal working policies and procedures with success variables (profitability) of a firm. Superior working capital management policies not only shield organizations from financial turbulence but can be managed to get a competitive edge over the competitors. For this he applied the financial ratios (Quick Ratio, Current Ratio and Gross Profit Ratio) on firm’s data to draw results.

Lyroudi and Lazaridis (2000) have conducted a study on the ground of Greek ford and beverages industry, and find the positive relationship which exists between the Cash Conversion Cycle and profitability. Annand and Gupta’s (2001); Deloof (2003) and Nerware (2004) empirical survey of working capital performance helps to identify the core determinants of WCM. He argues that the cash conversion efficiency, days of working capital, and days of operating cycle are the key variables of WCM.

Rehman (2006); Khan, Shah, Hijazi (2006) investigate the relationship between the WCM components (AAI, APP, ACP, and CCC) and firm profitability. Their sample unit was Pakistani firms, and explores the negative relationship between CCC and profitability.

Padachi (2006) use 56 manufacturing firms from 1998-2003. In his study he said more the receivables and higher the inventory level are less profitable for the firms. Rahnama Roudposhi & Kaee et al (2007) studied the WC- Strategies that Tehran stock exchange companies follows.

Raheman and Nasr (2007) and Burki (2008) conduct research in the Pakistani context. This study finds that Working Capital Management is significant part of corporate finance because it has effect on profitability and liquidity. After in 2011; they again conduct this research to observe the effects of working capital management on profit performance of Pakistan textile industry (2003-2008). Nazir and Afza (2009) taken the 204 KSE listed firms to investigate the relationsh between the management policies related to AAI, ACP, APP and profitability.

**Management Policies**

This field researches started with William Baumol (1952) who stated that cash stock is like as inventory of goods and put it first by linking inventory theory with monetary theory which encourage other researcher to do further research in the area of cash and inventory management models (Tobin 1958; Friedman 1959; Nadiri 1969). Mishra (1975) has worked on the problems of WCM in which he identified four areas; cash, inventory, receivables and working finance. Jain and Yadav (2000) had studied different management policies related to current assets management (account receivables and payables).

**Inventory Management Policies:**

The major component of WCM is the inventory management (Talekar 2005). With keeping in mind the changes in demands, production requirement and scarcity of resources, the management has to maintain the optimal level of inventory. Arroe, Harry (1951) explored that firms have to develop different policies to formulate different techniques for managing inventory like as ABC inventory system, Two-bin method, and Economic Order Quantity
(EOQ) model Just in Time (JIT) system. According to the Blackstone (1985), Lanconi (1993) and Jones (1993) the best approach to manage the optimal level of inventory is EOQ.

**Trade Receivables Policies:**
Numerous empirical studies have addressed the trade receivables in which its managerial policies have discussed. This term was firstly cited by Petersen Rajan (1997) who explores its different determinants. Mian and Smith (1992) had worked on to find out the bases on which firms manage its trade credits (receivables). Recently Molina and Preve (2009) explored the effects of financial distress on investment in trade receivables. In that study they find out that when the firms have high investment in clients then firm has to face the cash flow problems. According to Lawrence J. Gitman in his book Principles of Managerial Finance (11 ed.) to speed up collections from clients the firms have to pay attention on the Credit Selection and Standards (Minimum requirement of firm to extend credit), Credit Scoring (Scoring process of customer financial position), Credit Terms (Terms for sales on credit) and Credit Monitoring (An on-going review of receivables). The 200 large corporations showed that by extending trade credit on more favorable conditions may extend the sales (Bates 1971; Ricci 1999). Baranek and Scherr (1991) had conducted a study on to find out the trade credit limit policies in 500 fortune firms.

**Trade Payables Policies:**
The vital component of WCM is the current liabilities identified firstly by Jain and Kumar (1999) in India and South East Asia. Current liabilities are the short term liabilities which consist of loans, advances and account payables. According to Molina Preve (2009) had studied 100 fortune firms of Malaysia in which he explored the fact that to found CCC firms have to need of operating cycle and account payables. According to Lawrence J. Gitman for managing the account payables the firm has to studied about the Credit Terms (terms to buy at credit), Cash Discount Decisions (taking and giving up discount) And Credit Period (time to pay credit).

**Theoretical Background**
There are different theories that related with the short term corporate financing.

**Theory of Irrelevance:**
Miller & Modigliani (1958) stated that the firm’s value is independent irrespective of its capital structure and if firms’ value depend on the capital structure then this opportunities must have to available in the perfect market. And WCM plays no role in firms’ performance. This was the impractical statement by this theory but it provides the basic hypothetical framework for new studies.

**Static Trade off Theory:**
Recent capital structural approach is well explained by Myers (1984) and he split his theory in to two theories: Static Trade off Theory (STT) and Pecking Order Theory (POT). Under STT firms only follow debt to equity ratio for decisions and also perform accordingly. The benefits and costs of debt make the ratio which consists of taxes (positive correlation b/w taxes and leverages) and financial distress cost (if loans exceed from certain limit, bankruptcy problem arised). According to this theory, for the well management of debt – equity ratio, firms must have to concentrate on WCM.

**Pecking Order Theory:**
Theory states that when firms go to create their capital structures it must have to pursue some chain of fiscal results and also state that the most preferable source of financing of successful firms is in house financing (retained earnings). Myers and Majluf (1984) explore that
organizations feel hesitation to issue equity to public due to unpleasant conditions. Briefly speaking, POT states that organizations well know their resources, WC and Profitability so they pay attention on the WCM to get better economic results.

**Signaling Theory:**
This new concept of signaling theory was proposed by the Ross (1977) and theory states the debt of an organization is considered as a sign of confidence for financier. If any problem arises in organizational debts, then it signals that organization will have to face cash problems in future days. According to this theory, when the CCC of any organization is shorter, it signals the management that the firm has going at profitability track.

**Agency Theory:**
Jenson and Meckling (1976) recognize the difference b/w managers and shareholders and have different stakes with organization. The manager’s tries to reduce uncertainty and risk from their operations and owners want maximum profitability and owner’s value. For avoiding risk the managers grant credits by setting sound standards that lead to effective management of trade receivables which is WCM and this would show the result of profitability that is owner’s motive. So, according to this theory the work of management (WCM) contributes greater to owner’s motives (profitability).

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### Conceptual Model:

<table>
<thead>
<tr>
<th>Working Capital</th>
<th>Profitability of Firm</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>… Current ratio</em></td>
<td><em>… NPM</em></td>
</tr>
<tr>
<td><em>… CCC</em></td>
<td><em>… ROA</em></td>
</tr>
</tbody>
</table>

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**Section III: METHODOLOGY**

We adopt an extended form of the well-known methodology given by Hayajneh and Yassine (2011) which they have used to determine the WC performance of Jordanian manufacturing firms and devise the similar model for profitability. The methodology of our study is as under:

**Sample:**
The sample of this study is the Pakistani textile mills which covers the data from 2006-2012. The sample of this study covers the financial information of manufacturing firms of Pakistan. For the analysis, the basic information is deriving from the financial reports of 9 manufacturing firms.

**Definition of variables:**
The *dependent variable* of our research is firms’ profitability which is computed by the following:

Return on assets (ROA) = Net Profit/ Total Assets
Net profit margin (NPM) = Net Profit / Total Sales

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The independent variable has been divided into two sets. First is WCM which includes: Cash conversion cycle (CCC) is used to measure the working capital management efficiency. CCC is measured as:

\[
CCC = ACP + AAI - APP
\]

Second is control variable which includes: Current Ratio (CR) = Current Assets / Current Liabilities

The moderator variable which includes: Management Policies of Inventory, account receivables and account payable and their effectiveness is measured through ACP, AAI and APP. ACP is used to express the credit policy effectiveness. It is calculated as

\[
ACP = \text{Account Receivable} \times 365 / \text{sales}
\]

AAI is expressing the inventory policy effectiveness. It is calculated as

\[
AAI = \text{inventory} \times 365 / \text{Cost of Goods Sold}
\]

APP is used to express the payment policy effectiveness. It is calculated as

\[
APP = \text{Account Payable} \times 365 / \text{Cost of Goods Sold}
\]

Hypothesis:

H1: There is a negative relationship between CCC and Net Profit Margin & Return on Assets.

H2: There is a negative relationship between CR and Net Profit Margin & Return on Assets.

H3: There is a positive effect of management policies’ effectiveness over the relationship b/w WCM and firm’s profitability.

EMPIRICAL ANALYSIS:

Descriptive Statistics:
In this section, we have computed minimum, maximum, mean and standard deviation of all variables in our study. The table 1 shows the descriptive statistics of our study variables. The minimum value of NPM is -1% while the maximum value of NPM is 3% and mean is -3.2% and standard deviation of NPM is 6.01%. The minimum value of ROA is -5% and maximum value is 100% and the mean is 18.8% and SD is 45.83%. Table 1 shows the theoretical relationship among independent and dependent variables. The CCC has 26 days as minimum time and 32 days are the maximum time of the textile firms while the mean and SD values are 29.4 & 219.09 days respectively. The minimum value of CR of all firms is 1% and maximum value is 12.1% while the mean is 46.5% and SD is 52.66%. The Table 1 also describes the moderator variables effect on the stated relationship in term ACP, AAI and APP to elaborate the effectiveness of concerned management policies (shorten the time of ACP & AAI and lengthen the time to pay its debts – APP show the effectiveness of the policies).

Correlation Analysis:

The Pearson correlation is used to find the relationship among all variables of our study. The Table 2 shows Pearson Correlation Matrix among the concerned variable (independent variables, dependent variables and moderator variables). There is negative correlation among CCC and NPM & ROA because when firm shorten its CCC as much as possible without disturbing its operation it will enhance the profitability. The CR and NPM & ROA has a negative correlation among them because when a firm invest its resources in to productive assets – fixed assets instead of investing into current assets, that firm will be able to make larger profit.

This table reveals the negative correlation among the ACP and NPM & ROA. If the firm reduces its collection period, it will increase the profitability by reinvesting these collections in the profitable investment. Correlation b/w the AAI and NPM & ROA is negative it means
when firm reduces its inventory conversion period to enhance the profitability. The correlation b/w the APP and NPM & ROA is negative because when we lengthen our payments it will lead to enhance the profitability by investing spare cash in to profitable investment. All the above correlations are consistent with the previous studies.

**Regression Analysis:**
This analysis will find the relationship b/w the WCM and profitability with an effect of moderator variable – effectiveness of concerned management policies. The general model of regression is:

\[ Y = \alpha + \beta X + e \]  

(Equation 1)

Y is the dependent variable, \( \alpha \) is the intercept coefficient of firm, \( \beta \) is the slope coefficient of independent variable, \( X \) is the dependent variable and \( e \) is the residual error.

In the **Table 3**, the CR and CCC are the independent variables and NPM is the dependent variable. Independent variables- CR have the negative coefficient (.062) with the dependent variable – NPM while the CCC has a negative coefficient (-.311) with NPM and the value of \( r^2 \) is 0.099 as stated in Table 3 (Model 1). This shows that by the 1% increase in CR, the NPM will decrease by 6.2% and by the 1% increase in CCC; the NPM will decrease by 31.1%. These statistics confirms our H1 & H2 (part i).

\[ \text{NPM}= \alpha + (-0.062) \text{CR} + (-.311) \text{CCC} + e \]  

(Model 1)  

(Equation 2)

By controlling the direct effect of the CR & CCC and NPM, the coefficient of CR is -0.11 and CCC is -1.262 while the coefficients of ACP & AAI and APP are 2.969, 1.445 & 1.383 respectively but the \( r^2 \) value is 0.953. This shows that by the 1% increase in CR, the NPM will decrease by 11% and by the 1% increase in CCC; the NPM will decrease by 126.9% and if the effectiveness of concerned policies goes too higher the NPM will improve more and more. These statistics confirms our H1, H2 & H3 (part i).

\[ \text{NPM}= \alpha + (-0.11) \text{CR} + (-1.262) \text{CCC} + (2.969) \text{ACP} + (1.445) \text{AAI} + (1.383) \text{APP} + e \]  

(Model 2)  

(Equation 3)

The overall models significance is 0.77 for 1st Model and 0.112 for 2nd Model.

In the **Table 4**, the CR and CCC are the independent variables and ROA is the dependent variable. Independent variables- CR have the negative coefficient (-.311) with the dependent variable – ROA while the CCC has a negative coefficient (-.088) with ROA and the value of \( r^2 \) is 0.763 as stated in Table 4 (Model 1). This shows that by the 1% increase in CR, the ROA will decrease by 31.1% and by the 1% increase in CCC; the ROA will decrease by 8.8%. These statistics confirms our H1 & H2 (part ii).

\[ \text{ROA}= \alpha + (-0.311) \text{CR} + (-.088) \text{CCC} + e \]  

(Model 1)  

(Equation 4)

By controlling the direct effect of the CR & CCC and ROA, the coefficient of CR is 0.549 and CCC is -1.05 while the coefficients of ACP & AAI and APP are 1.284, 1.327 & .867 respectively but the \( r^2 \) value is 0.9. This shows that by the 1% increase in CR, the NPM will decrease by 54.9% and by the 1% increase in CCC; the ROA will decrease by 105% and if the effectiveness of concerned policies goes too higher the ROA will improve more and more. These statistics confirms our H1, H2 & H3 (part ii).

\[ \text{ROA}= \alpha + (-0.549) \text{CR} + (-1.05) \text{CCC} + (1.284) \text{ACP} + (1.327) \text{AAI} + (.867) \text{APP} + e \]  

(Model 2)  

(Equation 5)

The overall models significance is 0.763 for 1st Model and 0.900 for 2nd Model.
SUMMARY & CONCLUSION:
The existing literature suggests that there is a negative relationship b/w the components of WCM and firms’ profitability. In study has been conducted in the context of Pakistan textile industry, for which its financial data is taken from 2006 – 2012. In this study we empirically study the relationship b/w the WCM and Profitability with a moderating effect of management policies effectiveness. CR and CCC are used to measure WCM and Profitability of the firm has been measured in term of ROA & NPM. The management policies effectiveness is measured through ACP, AAI and APP. Consistent with the literature review; we study their relationship by computing the minimum, maximum, mean, standard deviation, correlation and regression of all variables. For data analysis we have adopted the methodology of Hayajneh and Yassine (2011) which they used for Jordanian manufacturing firms to find out the same relationship. From data analysis of our study, it is concluded that components of WCM – CR & CCC have the negative effect on the firms’ profitability- ROA & NPM. With the effective management policies, the firms are able to reduce its operating cycle days without disturbing its operations that leads to higher profitability. In short, the effectiveness of management policies strengthens the relationship of WCM and Profitability.

DISCUSSION AND PRACTICAL IMPLICATION:
Our study hypothesis was there is the negative relationship among CCC & CR and ROA & NPM. This relationship shows that if we want to enhance any textile firms’ profitability we have to focus on its WCM. And by reducing the duration of CCC and investment into the current assets, the firm would be able to generate maximum profit. Its means when any firm uses its resources for productive assets – fixed assets, and for any profitable project, it will be in better position to earn more profit from them. This all could be possible if the firm has uses effective management policies to manage its receivables, inventory and payments without hurting its operations. In brief, when a firm accelerates its collections and fasten its operation to convert the raw material into finish form & to sell these finished products, it would be better opportunity for it to use these collected revenues for profitable investment to earn the max profits. These results could also be achieved by lengthening its payments without hurting its repute and credibility. These results shows the importance that the Financial Manager must have to pay major attention on managing the WC and formulating and implementing the inventory’, receivables’ and payments’ policies for getting the better economic position.

LIMITATIONS:
Pakistan’s textile industry is the largest industry that contributes 60% - 65%. The first limitation of our study is the lack of authentic, accurate, and updated data, though the financial statements of some textile firms, Govt. Organizations / Agencies’ data e.g. Textile Commission Organizations (TCO), Federal Bureau of Statistics (FBS), Export Promotion Bureau (EPB) and Economic Surveys reports are gathered for our research’ data analysis. And the second limitation in conducting this research was the shortage of time which was 2-4 months.

FUTURE DIRECTIONS:
The future avenue of research is that the same study can be conducted in the context of other manufacturing concerns or in non – manufacturing concerns. In non- manufacturing concerns like financial institutions- banks, insurance companies & etc. the stated relationship may differ. At financial firms’ where the current assets are of most importance and required in more abundant form, there may be possible that the relationship among CR, CCC and NPM, ROA may be positive. And other determinants can be added in order to measure the WCM efficiency, Profitability and management policies effectiveness like as GR, QR, and LR for WCM and ROI, ROE, NOI, SR ratio, for profitability. Same as these, CRM, SRM, one
window operations, management skills & expertise can be used for measuring the management policies effectiveness. These all variables are good predictors of the relevant variable.

REFERENCES


APPENDIX 1:
Table 1: Descriptive Statistics

<table>
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<tr>
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<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
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<tbody>
<tr>
<td>CR</td>
<td>.01</td>
<td>1.21</td>
<td>.4650</td>
<td>.52656</td>
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<tr>
<td>CCC</td>
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<td>32</td>
<td>29.4000</td>
<td>2.19089</td>
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<tr>
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<td>.03</td>
<td>-.0320</td>
<td>.06017</td>
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<tr>
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<td>.1880</td>
<td>.45833</td>
</tr>
<tr>
<td>ACP</td>
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<td>20</td>
<td>17.0000</td>
<td>2.00000</td>
</tr>
<tr>
<td>AAI</td>
<td>17</td>
<td>26</td>
<td>23.6667</td>
<td>3.50238</td>
</tr>
<tr>
<td>APP</td>
<td>12</td>
<td>13</td>
<td>12.3333</td>
<td>.51640</td>
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</table>

Table 2: Correlations

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<th>NPM</th>
<th>ROA</th>
<th>ACP</th>
<th>AAI</th>
<th>APP</th>
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<tbody>
<tr>
<td>CR</td>
<td>1</td>
<td>.820</td>
<td>-.832</td>
<td>-.357</td>
<td>.746</td>
<td>.300</td>
<td>-.456</td>
</tr>
<tr>
<td>CCC</td>
<td>.820</td>
<td>1</td>
<td>-.918</td>
<td>-.153</td>
<td>.843*</td>
<td>.385</td>
<td>-.042</td>
</tr>
<tr>
<td>NPM</td>
<td>-.832</td>
<td>-.918</td>
<td>1</td>
<td>.196</td>
<td>-.723</td>
<td>-.344</td>
<td>-.197</td>
</tr>
<tr>
<td>ROA</td>
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<td>-.153</td>
<td>.196</td>
<td>1</td>
<td>-.081</td>
<td>-.227</td>
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<tr>
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<td>-.723</td>
<td>-.081</td>
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<td>.514</td>
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<td>-.344</td>
<td>-.227</td>
<td>.514</td>
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<td>.516</td>
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<td>APP</td>
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<td>-.197</td>
<td>-.572</td>
<td>.387</td>
<td>.516</td>
<td>1</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.05 level.
Table 3: Regression Analysis 1  
Dependent Variable: NPM

| Variable | Model 1 | | | Model 2 | | |
|----------|--------|---|---|--------|---|
|          | β      | t  | Sig. | β      | t  | Sig. |
| CR       | -.062  | -.146 | .505 | -.11  | -.520 | .117 |
| CCC      | -.311  | -.732 | .496 | -1.262 | -2.828 | .106 |
| ACP      | 2.969  | 3.629 | .496 | .549  | .722  | .546 |
| AAI      | 1.445  | 3.222 | .496 | -1.05 | -.655 | .58  |
| APP      | 1.383  | 2.037 | .496 | .867  | .355  | .756 |
| r²       | .099   |    | .77 | .103  |      | .763 |
| Model Sig. | .77   | 0.000 | | .112  | 0.000 |    |
## Appendix 2:

### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAI</td>
<td>Average Age of Inventory</td>
</tr>
<tr>
<td>ACP</td>
<td>Average Collection Period</td>
</tr>
<tr>
<td>APP</td>
<td>Average Payment Period</td>
</tr>
<tr>
<td>CCC</td>
<td>Cash Conversion Cycle</td>
</tr>
<tr>
<td>CR</td>
<td>Current Ratio</td>
</tr>
<tr>
<td>CRM</td>
<td>Customer Relationship Management</td>
</tr>
<tr>
<td>DWC</td>
<td>Days of Working Capital</td>
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<tr>
<td>GR</td>
<td>Gearing Ratio</td>
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<tr>
<td>LR</td>
<td>Liquidity Ratio</td>
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<td>Net Operating Income</td>
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<td>NPM</td>
<td>Net Profit Margin</td>
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<td>Quick Ratio</td>
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<td>Return on Equity</td>
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<td>ROI</td>
<td>Return on Investment</td>
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<tr>
<td>SR</td>
<td>Sales Revenue</td>
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<tr>
<td>SRM</td>
<td>Supplier Relationship Management</td>
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<tr>
<td>WCM</td>
<td>Working Capital Management</td>
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