RELATIONSHIP BETWEEN THE LIQUIDITY AND PROFITABILITY OF SELECT HEAVY ENGINEERING PUBLIC SECTOR COMPANIES

Dr. T. CHANDRABAI¹ & Dr. G.V. PRAVEEN²

¹Associate Professor, SR University, India
²Professor, SR University, India

ABSTRACT

The main purpose of this study is to identify the relationship between short-term liquidity and profitability of the select Heavy Engineering Public Sector Manufacturing Companies in India. A well designed and implemented short-term liquidity management is expected to contribute positively to the creation of a firm’s value. So, the business has to apply the optimum liquidity position to run the manufacturing and other operations smoothly. Managing the optimum liquidity position is crucial for the heavy engineering companies because of long operating cycle. Most of the fund will be blocked and unable to convert into cash in a short span of time. In general, heavy engineering companies’ possess large inventory levels and they have to convert this inventory into cash in a short period. Three companies with thirty years data from companies’ annual reports are selected for this study. Ratios are calculated and it analyzed by using multi-regression & ANOVA technique. The findings have shown a significant relationship between liquidity and profitability of select sample.

The regression line found with this study is:

\[
\text{ROTA} = -29.999 + 0.459 \times \text{Size} + 42.299 \times \text{CA/TA} -13.77 \times \text{CL/TA} -17.921 \times \text{Leverage} -0.013 \times \text{AR Days} + 0.006 \times \text{INV Days} + 0.00 \times \text{AP Days} + 14.108 \times \text{CA Turn}
\]

KEYWORDS: Heavy Engineering, Profitability, Liquidity, Operating cycle and Cash conversion cycle & Regression

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1. INTRODUCTION

Any type of business organization requires liquidity to run its operations smoothly. The level of liquidity will be maintained by the business based on its size and nature. The liquidity shows the current assets position of the business and it is also known as working capital management (WCM). This liquidity is acquired by acquiring the capital from various internal and external sources of the business. The capital required to run the business is divided into two types such as fixed capital and working capital (liquidity). The decision about fixed and working capital is crucial because inefficient management of both will impact the profitability of the business. Therefore the inefficient decisions regarding the investment in liquidity may upset the operations of the business. So, the business has to maintain the optimum liquidity position to run its business operations smoothly. Liquidity is a measure of the future credit worthiness of the business. It is the portion of total capital which is employed in short term operations. The question arises here is such capital is available to meet short term obligation in the form of cash. In fact, it is not necessary that the liquidity is not only in cash but it can be other items like stock, small advances, receivables. Inadequacy and mismanagement of liquidity are the major causes of business failure.

The liquidity is managed with the internal and external manufacturing and cash operations of the business. The effectiveness of these operations will find with operating cycle and cash cycle. Operating cycle or cash cycle is the
duration of time required to complete the sequence of events right from purchase of raw material/goods for cash to the realization of sales in cash. According to O. M. Joy, the operating cycle refers to the length of time necessary to a cycle of events such as conversion of cash into raw material, conversion of raw material into work-in-process, conversion of work-in-process into finished goods, conversion of finished goods into debtors or bills receivables through sale and conversion of debtors or bills receivables into cash.

2. REVIEW OF LITERATURE

Many academic research studies were focused on different facets of working capital management or liquidity management. These studies were divided into: working capital management practices in various sectors, components of working capital management such as inventory management, cash management and credit management. Some research studies were also found on the relationship between working capital management and profitability of the business. Some other researchers’ did the comparative studies on relationship between working capital management and profitability among the sectors. The research studies on the components of working capital management are discussed below with specifically on cash management.

<table>
<thead>
<tr>
<th>Author &amp; Year</th>
<th>Sample or data source</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>OWOLABI, Sunday Ajao &amp; OBIDA, Solomon Small (2012)</td>
<td>12 manufacturing companies quoted on the Nigerian Stock Exchange was selected</td>
<td>Descriptive analysis</td>
<td>Liquidity management was measured in terms of the companies Credit Policies, Cash Flow Management and Cash Conversion Cycle had significant impact on corporate profitability</td>
</tr>
<tr>
<td>Chandrabai &amp; Dr. K. Venkata Janardhan Rao (2011)</td>
<td>Six years data of a cement company</td>
<td>Correlation</td>
<td>The liquidity position of the select sample is satisfactory.</td>
</tr>
<tr>
<td>Ebben and Johnson (2011)</td>
<td>Financial data of 833 and 879 small U. S. retail and manufacturing firms.</td>
<td>Regression</td>
<td>cash conversion cycle having a positive and significant effect on levels of invested capital and a negative and significant effect on asset turnover, return on invested capital, and net balance position</td>
</tr>
<tr>
<td>Chandrabai &amp; Dr. K. Venkata Janardhan Rao (2011)</td>
<td>Two heavy electrical companies liquidity position is compared. Five years data is used for this purpose</td>
<td>Ratios, comparative analysis and rank analysis is used</td>
<td>The DCP of BHEL is more than ABB, but both are maintaining satisfactory liquidity position</td>
</tr>
<tr>
<td>Russell P (2009)</td>
<td>50 largest non-bank corporations over the period from 1990-2004</td>
<td>Skewness and the Kolmogorov-Smirnoff Statistic</td>
<td>Aggressive management of working capital and significant increases in productivity resulted in significant improvements in cash flow per share and reduced corporate reinvestment.</td>
</tr>
<tr>
<td>S. K. Khatik &amp; Rashmi Jain (2009)</td>
<td>Data of MPSEB for the years (1995-96 to 2004-05)</td>
<td>Used various ratios for judging the short term solvency, cash efficiency, capacity of daily payment</td>
<td>There was high volatility in total cash payment and cash ratio</td>
</tr>
</tbody>
</table>
### Relationship Between the Liquidity and Profitability of Select Heavy Engineering Public Sector Companies

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Description</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faulkender &amp; Wang (2006)</td>
<td>Revised event study methodology that examines market returns over firm fiscal years to test empirical predictions about the cross-sectional variation in the market value of cash.</td>
<td>Regression</td>
<td>Marginal value of cash declines with larger cash holdings, higher leverage, better access to capital markets, and greater as firms choose cash distribution via dividends rather than repurchases.</td>
</tr>
<tr>
<td>Chang-Soo, Kim; Mauer, David; Sherman, Ann E (1998)</td>
<td>Panel data on 915 U. S. industrial firms during the 20 year period from 1975 to 1994</td>
<td>Regression</td>
<td>Optimal investment in liquidity is increasing the cost of external financing, the variance of future cash flows, and the return on future investment opportunities.</td>
</tr>
</tbody>
</table>

The relationship between WCM and profitability is examined by some of the researchers by using cash conversion cycle (CCC), accounts receivables conversion period, inventory conversion period and accounts payable deferral period. The relationship between CCC and the performance of the firm has been broadly analyzed in large no of firms, and most of these studies have generally revealed an inverse relationship between CCC and the performance. For example, Shin and Soenen (1998) found a negative relationship between CCC and operating profits in a sample of large American corporations over a 20-year period. Similar results have been found in Belgian corporations (Deloof; 2003), in firms in the Athens Stock Exchange (Lazaridis and Tryfonidis, 2006), in a sample of 94 Pakistani firms listed on Karachi Stock Exchange (Rehman and Nasr, 2007), in a sample of Japanese and Taiwaneese corporations (Wang, 2002), in a sample of Bloomberg’s database of 172 listed companies from Malaysia five year period from 2003 to 2007 (Azhar Binti Mohamad and Noriza Binti Mohd Saad, 2010), and in a sample of food industry enterprises in Poland in the period of 2005-2009 (Anna Bieniasz and Zbigniew Golaś, 2011). But some studies have shown the positive relationship between CCC and profitability. For example, Murtala Zakari and Sani Saidu (2016) found a positive relationship between CCC and corporate profitability. Similar results were observed in the study made by Faris Nasif Al-Shubiri and Nassem Mohammad Aburumman (2013) with the sample of Jordanian different industrial sector of 11 was selected covering the period 2005-2011 listed on the Amman Stock Exchange (ASE). This evidence supports the view that effective working capital management increases returns by reducing cost of capital and by allowing firms to achieve higher levels of asset turnover. Age of Inventory, Age of Debtors and Age of Creditors witnessed both positive and negative influences of variations in the independent variables (Amalendu Bhunia and Sri Bidhan Brahma in 2011), (Sushma Vishnani and Bhupesh Kr. Shah in 2007).

Few other studies on working capital management are discussed below. The impact of financial leverage on the relationship between working capital and company value was analyzed by Juliano Ribeiro de Almeida, William Eid Jr., (2014) with the selected sample of Brazilian public companies listed on BM&FBOVESPA from 1995 through 2009. Julius Enqvista, Michael Grahamb and Jussi Nikkinen (2014) examined the role of business cycles on the working capital–profitability relation-ship using a sample of Finnish listed companies over an 18-year period. Tanushree Sharma and Utkarsh Rathore (2013), “investigated the relationship in Indian Oil Corporation Ltd. The results revealed that out of eight ratios relating to working capital management, four ratios, viz., CR, CA/TA Ratio, CA/S Ratio, and CTR, registered positive association with the ROI; and, the remaining ratios like DTR, ITR, Working Capital Turnover Ratio and QR witnessed a negative association with the selected profitability ratio”.

Zeeshan Khan, Syed Tehseen Jawaied, Imtiaz Arif and Muhammad Nadeem Khan(2012), examined this
relationship in four different sectors namely textile, chemical, engineering and sugar at Pakistan from 2004 to 2009. Regression results indicate that AR_Days has insignificant effects on profitability except in sugar and allied sector. At the same time debt ratio also has insignificant effect on profitability except in engineering sector. Furthermore AP_Days has insignificant effect only in sugar and allied sector. ITR, CR and firm size has significant effects on profitability in all sectors”. Dr. Amalendu Bhunia and Mr. Amit Das (2012), “examined this relationship in Indian private sector of small-medium steel companies for the period from 2003 to 2010. In this study relatively efficient WCM was found but liquidity position had no impact on profitability. The study showed there was no relationship between debt financing and profitability. This study also showed a stumpy relationship between WCM including working capital cycle and profitability, but WCM and working capital cycle had no impact on profitability”. Amarjit Gill, Nahum Biger, Neil Mathur (2010), this study was selected a sample of 88 American firms listed on New York Stock Exchange for a period of 3 years from 2005 to 2007 was selected. It found statistically significant relationship between the cash conversion cycle and profitability. It suggested that managers can create profits for their companies by handling correctly the cash conversion cycle and by keeping accounts receivables at an optimal level.

Dr. Hong Yuh Ching, MSc. Ayrton Novazzi, Dr. Fábio Gerab (2011), investigated if there is any difference between corporate profitability and working capital management in two separate groups of companies: working capital intensive and fixed capital intensive. Managing inventory as well as cash conversion efficiency to an optimum level will yield more profit in the working capital intensive type of company. Singh and Pandey (2008) had an attempt to study the working capital components and the impact of working capital management on profitability of Hindalco Industries Limited for period from 1990 to 2007. This study showed that current ratio, liquid ratio, receivables turnover ratio and working capital to total assets ratio had statistically significant impact on the profitability of Hindalco Industries Limited. Raheman and Nasr (2007) have selected a sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of 6 years from 1999-2004 to study the effect of different variables of working capital management on the net operating profitability. From result of study, they showed that there was a negative relationship between variables of working capital management including the average collection period, inventory turnover in days, average collection period, cash conversion cycle and profitability. Besides, they also indicated that size of the firm, measured by natural logarithm of sales, and profitability had a positive relationship.

Finally, Afza and Nazir (2009) made an attempt in order to investigate the traditional relationship between working capital management policies and a firm’s profitability for a sample of 204 non-financial firms listed on Karachi Stock Exchange (KSE) for the period 1998-2005. The study found significant different among their working capital requirements and financing policies across different industries. Moreover, regression result found a negative relationship between the profitability of firms and degree of aggressiveness of working capital investment and financing policies.

3. STATEMENT OF THE PROBLEM

Most of the research studies were focused on the relationship between liquidity (working capital management) and profitability in case of small manufacturing firms. As the length of the operating cycle is less for small manufacturing firms, so there is a possibility to get earlier cash conversion cycle which results in increase in profitability. The research studies on liquidity in small manufacturing firms were proved that there is a significant relationship between profitability and liquidity (cash conversion cycle). As the select companies fall under the category of heavy engineering manufacturing companies, generally their operating cycle is large since they carries large quantity of raw materials, work in progress,
finished goods. They also carry huge amount of debtor’s balances and large amount of cash. So, this study used the models developed by the above researchers and applied on to select sample to examine the relationship between liquidity (WCM) and profitability.

3.1 Methodology

This study reveals both descriptive and analytical character. Regarding the theoretical concept it is descriptive since it interprets and analysis the secondary data in order to arrive at appropriate conclusion, it is also analytical in character. The important objective of this paper is to examine the impact of liquidity (WCM) on corporate profitability of select Heavy Engineering Public Sector Manufacturing companies in India. This is achieved by developing a similar empirical framework first used by Shin and Soenen (1998) and the subsequent work of Deloof (2003), Rehman and Nasr, (2007) on small manufacturing firms.

Different ratios such as Return on Total Assets (ROTA), Ratio of current assets to Total assets (CA/TA), Ratio of Current Liabilities to Total assets (CL/TA), Leverage (Total debt/ Total assets), Current asset turnover (CA_Turn), Natural Logarithm of Sales (LN sales), Days inventory (INV_Days), Days Receivables (AR_Days), Days Payable (AP_Days) Cash Conversion Cycle (CCC) were used as variables to test the hypothesis. ROTA is used as dependent variable and all other ratios used as independent variables. Statistical techniques like Multi-Regression and ANOVA adopted to test the hypothesis.

3.2: Sample Design: The present study is confined to three (3) heavy engineering public sector companies. Data is extracted from the annual reports of these companies. The selected sample is Bharat Heavy Electricals Ltd., Heavy Engineering Corporation Ltd., and Bharat Bharai Udyog Nigam Ltd. With effect from November 2015, the name of Bharat Bhari Udyog Nigam Ltd., has changed its name as Braithwaite Burn and Jessop Construction Company Ltd. Secondary data has been obtained from published reports like the annual reports of the company, balance sheets, and profit and loss account, booklets, records such as files, reports maintained by the company. The study period is from 2004-05 to 2016-17.

3.3: Hypothesis

H0: There is no significant relationship between liquidity and profitability of select sample.

H1: There is a significant relationship between liquidity and profitability of select sample.

3.4: Results

The regression equation is presented as:

\[ Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 \]

In this equation Y is the dependent variable that the study is trying to predict, x1, x2, x3, x4, x5, x6, x7 and x8 are the independent variables are using to predict it. \( \alpha, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7 \) and \( \beta_8 \) are the coefficients that describe the size of the effect of the independent variables on dependent variable Y.

Table 1: R is the multiple correlation coefficients between the predictors (shown in Table-1) and the outcome. R-Square is a measure of how much of the variability of in the outcome is accounted for by the outcome. R-Square value is 0.796, which means that the set of independent variables accounts for 79.6% of the variation in ROTA. The adjusted R-Square gives us some idea of how well the model generalizes and ideally this value would like to be very near to the value
of R-Square. The difference for the final model is 5.4% (0.796-0.742=0.054 or 5.4%), it means if the model was derived from the population rather than a sample it would account for approximately 5.4% less variance in outcome. From this table Standard Error of the Estimate column shows the standard deviation of the residuals. As $R^2$ increases the Standard Error of the Estimate will decrease. Durbin-Watson statistic is used to test the presence of autocorrelation in the errors of a regression model. Autocorrelation means that the errors of adjacent observations are correlated. If the errors are correlated, then least-squares regression can underestimate the standard error of the coefficients. Underestimated standard errors can make the predictors seem to be significant when they are not. Durbin-Watson statistic value is 2.068 which are lying between lower bound ($D_L$) (0.9853) and upper ($D_U$) (2.0846) bounds. If $D > D_U$, negative correlation exists; if $D < D_L$, positive correlation exists; if $D$ is in between the two bounds, the test is inconclusive.

Table 2: ANOVA tests whether the model is significantly better at predicting the outcome than using the mean. F-ratio represents the ratio of the improvement in prediction that results from fitting the model, relative to the inaccuracy that still exists in the model. The p-value is 0.000. Since p-value is less than 0.01, we reject the null hypothesis. So at the 99% level of confidence we conclude that there is a significant impact of working capital management on the profitability of the select sample. It is a statistically significant model. Model column of this table shows the predictor variables (constant, CATurn, Leverage, Size, CLTA, CATA, AR_Days, APDays, INV_Days). The first variable (constant) represents the constant, also referred as the Y intercept. The column B of this table represents the values for the regression equation for predicting the dependent variable from the independent variable. If the value is positive we can say that there is a positive relationship between predictor and outcome, negative coefficient represents negative relationship. A multi linear regression equation is found to predict ROTA based on working capital or liquidity ratios. A significant regression equation is found with $F(8,30)= 14.652$, $P<0.01$, with the $R^2$ of 0.796.

From Table 3, the regression equation observed as:

$$
ROTA = -29.999 + 0.459 \times \text{Size} + 42.299 \times \frac{\text{CA}}{\text{TA}} -13.77\times \frac{\text{CL}}{\text{TA}} -17.921\times \text{Leverage} -0.013\times \text{AR_Days} + 0.006\times \text{INV_Days} + 0.00\times \text{AP_Days} + 14.108\times \text{CA_Turn}
$$

This equation is analyzed in the following way.

Size – The coefficient for Size is 0.459. So for every unit increase in size, a 0.459 unit increase in ROTA is predicted, holding all other variables constant. This result is matched with the studies of Rehman and Nasr, (2007).

CA/TA – The coefficient for CA/TA ratio is 42.299. So for every unit increase in CA/TA ratio, a 42.299 unit increase in ROTA is predicted, holding all other variables constant.

CL/TA – The coefficient for CL/TA is 13.77. So for every unit increase in CL/TA ratio, a 13.77 unit decrease in ROTA is predicted, holding all other variables constant.

Leverage – The coefficient for Leverage is 17.921. So for every unit increase in Leverage of the select sample, a 17.921 unit decrease in ROTA is predicted, holding all other variables constant. This result is matched with the studies of Rehman and Nasr, (2007), Hong Yuh Ching. et al. (2011)

AR_Days – The coefficient for AR_Days is 0.013. So for every unit increase in AR_Days of the select sample, a 0.013 unit decrease in ROTA is predicted, holding all other variables constant. This result is matched with the studies of Rehman and Nasr, (2007), Deloof (2003)
INV_Days – The coefficient for INV_Days is 0.006. So for every unit increase in INV_Days of the select sample, a 0.006 unit increase in ROTA is predicted, holding all other variables constant. This value is negligible. This result is not matching with the previous studies because it may be due to volatility in supply of inventory.

AP_Days – The coefficient for AP_Days is 0.00. So for every unit increase in AP_Days of the select sample, a 0.00 unit increase in ROTA is predicted, holding all other variables constant. This value is highly negligible. This paper also adds to finding of Lazaridis and Tryfonidis (2006) who claimed that there was a positive relationship between AP_Days and profitability.

CA_Turn – The coefficient for CA_Turn is 14.108. So for every unit increase in CA_Turn of the select sample, a 14.108 unit increase in ROTA is predicted, holding all other variables constant.

The t statistic is calculated as coefficient divided by its standard error. The standard error is an estimate of the standard deviation of the coefficient, the amount it varies across cases. It can be thought of as a measure of the precision with which the regression coefficient is measured. If a coefficient is large compared to its standard error, then it is probably different from 0. The standardized beta values tell us the number of standard deviations that the outcome will change as a result of one standard deviation change in the predictor. These values are directly comparable because the beta values are measured in standard deviation units. Multicollinearity test is used to find the high intercorrelations or interassociations among the independent variables. In the presence of high multicollinearity, the confidence intervals of the coefficients tend to become very wide and the statistics tend to be very small. It becomes difficult to reject the null hypothesis of any study when multicollinearity is present in the data under study. Multicollinearity can also be detected with the help of tolerance and its reciprocal, called variance inflation factor (VIF). If the value of tolerance is less than 0.2 or 0.1 and, simultaneously, the values of VIF are 10 and above, then the multicollinearity is problematic. From Table-3, it is observed that the tolerance values are above 0.2 and VIF values are below 5. This indicates that the selected independent variables are totally independent.

From this model it is also observed that CA/TA, CL/TA, Leverage and CA_Turn are the significant predictors of the dependent variable ROTA whose p-value is less than 0.01.

Table 4; SPSS provided the information that the variable CCC is excluded from regression equation. When this variable entered into the model it would not have a significant impact or impact on the model’s ability to predict ROTA. This may be due to high volatility in cash conversion cycle of select sample (Negative CCC).

Table 5: The condition index greater than15 indicates a possible problem. If this index is greater than30 suggests a serious problem with collinearity. From this table it is observed that the last dimension 9 (CCC) is having serious problem with colliniarity.

4. DISCUSSIONS AND CONCLUSIONS

The main purpose of this study was to find the impact of liquidity management on profitability in Heavy Engineering Public Sector Manufacturing Companies in India. Findings of this study show that there is a significant impact of WCM (liquidity) on profitability of select sample.

The positive relationship between ROTA and CA/TA indicates that the higher the level of current assets position in total assets, the more working capital or liquidity would be required by the select sample as operative necessity.
Similarly, the negative relationship between ROTA and CL/TA indicates that the higher the level of current liabilities position in total assets would also require more liquidity working capital by the select sample as efficiently operative necessity. The relationship between profitability and leverage, AR_Days is matched with the existing research studies. But the relationship between profitability and INV_Days is not matching with the previous studies.

The negative relationship between leverage and ROTA indicate that the higher level of debt results in lower the level of profitability. This result was matched with the findings of Nazir and Afza (2008, 2009) and Taleb et al. (2010).

Most of the research studies were shown that there was a significant relationship between profitability and operating cycle, CCC. But this study has shown that there is no relationship between these variables. So, the select sample has to focus more on improving its operating cycle and cash cycle.

5. FUTURE RESEARCH

Future study may include the economic factors such as business cycle, inflation, risk may also influence the liquidity position.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.892a</td>
<td>.796</td>
<td>.742</td>
<td>9.23545</td>
<td>.796</td>
<td>14.652</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), CATurn, Leverage, Size, CLTA, CATA, AR_Days, APDays, INV_Days
b. Dependent Variable: ROTA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>9997.700</td>
<td>8</td>
<td>1249.712</td>
<td>14.652</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>2558.806</td>
<td>30</td>
<td>85.294</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12556.506</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROTA
b. Predictors: (Constant), CATurn, Leverage, Size, CLTA, CATA, AR_Days, APDays, INV_Days

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-.29999</td>
<td>19.946</td>
<td>-.150</td>
<td>.143</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>.459</td>
<td>.745</td>
<td>.067</td>
<td>.616</td>
<td>.543</td>
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<tr>
<td>CATA</td>
<td>42.299</td>
<td>18.399</td>
<td>.267</td>
<td>2.299</td>
<td>.029</td>
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<tr>
<td>Leverage</td>
<td>-17.921</td>
<td>3.491</td>
<td>-.665</td>
<td>-5.133</td>
<td>.000</td>
</tr>
<tr>
<td>AR_Days</td>
<td>-.013</td>
<td>.026</td>
<td>-.065</td>
<td>-.479</td>
<td>.635</td>
</tr>
<tr>
<td>INV_Days</td>
<td>.006</td>
<td>.044</td>
<td>.021</td>
<td>.132</td>
<td>.896</td>
</tr>
<tr>
<td>APDays</td>
<td>.000</td>
<td>.001</td>
<td>.013</td>
<td>.105</td>
<td>.917</td>
</tr>
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</table>

Impact Factor (JCC): 8.8746
Relationship Between the Liquidity and Profitability of Select Heavy Engineering Public Sector Companies

Table 4

<table>
<thead>
<tr>
<th>Model</th>
<th>CCC</th>
<th>Beta In</th>
<th>Sig.</th>
<th>Partial Correlation</th>
<th>Collinearity Statistics</th>
<th>Tolerance</th>
<th>VIF</th>
<th>Minimum Tolerance</th>
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<tbody>
<tr>
<td></td>
<td>86288.353</td>
<td>1.584</td>
<td>.124</td>
<td>.282</td>
<td>2.180E-012</td>
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<td>2.180E-012</td>
<td></td>
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</table>

a. Dependent Variable: ROTA
b. Predictors in the Model: (Constant), CATurn, Leverage, Size, CLTA, CATA, AR_Days, APDays, INV_Days

Table 5

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimension</th>
<th>Eigen value</th>
<th>Condition Index</th>
<th>Variance Proportions</th>
<th>Tolerance</th>
<th>VIF</th>
<th>Minimum Tolerance</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>(Constant)</td>
<td>Size</td>
<td>CLTA</td>
<td>Leverage</td>
<td>AR_Days</td>
<td>INV_Days</td>
<td>APDays</td>
</tr>
<tr>
<td>1</td>
<td>6.506</td>
<td>1.000</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>2</td>
<td>1.183</td>
<td>2.345</td>
<td>.00</td>
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a. Dependent Variable: ROTA

REFERENCES


