

## MANAGEMENT REVIEW

# Impact of Working Capital Practices on Profitability of Indian Corporate Giants in New Millennium: An Exemplification of Reliance Industries Limited

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### Abstract

*Financial decisions of corporate firms are a widely researched dimension of corporate finance. Working capital decisions construes an important part of corporate financial decisions, though basic focus of researchers had been financing and investing decisions, as these two categories of financial decisions are assumed to directly affect the profitability of firms. Nonetheless, working capital decisions have their own role to play in corporate profitability, though indirectly. For the corporate firms in developing countries like India, the relevance of these decisions have greatly increased in recent times as the impact of liberalization and privatization policies has started getting reflected through various dimensions of corporate performance. Various studies have explored that profitability of corporate firms is also affected by working capital practices of these firms. But is the story same in new millennium? Exemplifying Reliance Industries Limited, one of the largest firms in Indian corporate sector, this research work attempts to explore the impact of working capital management on profitability of private corporate firms in India with the help of regression analysis.*

### Introduction

Working Capital Management is one of the important aspects of financial decisions of a corporate firm. Management of short-term assets and liabilities, technically termed as working capital management, is extremely crucial for the survival of the firm as it plays an important role in the operational activities of the firm by ensuring smooth conduct of operational activities, thereby affecting the profitability of a firm in direct as well as indirect manner. Anand and Malhotra (2007), explored that a well-designed and properly implemented working capital policy could contribute to the creation of the firm's value. Similarly, Filbeck and Krueger (2005) narrated that business success heavily depends on the ability of financial executives to effectively manage receivables, inventory, and payables.

A firm's need for capital is assessed broadly on two time horizons, long-term and short-term. The short-term period is normally assumed to be a period less than a year and the amount of capital needed for this period is popularly termed as working capital. This capital is basically required for the day-to-day operations of the business and is assumed to affect the operational profitability of the firm directly. Numerically, the excess of current assets over the current liabilities of a firm represents it. The sum total of current assets is also termed as gross working capital and technically represents the investment of total funds in short term activities. Similarly, current assets net of current liabilities are popularly termed as net working capital and technically represents the part of short term investment in business activities that is financed through long term funds.

Business firms normally practice three broad working capital policies; Aggressive, Conservative, and Moderate. Firms practicing aggressive working capital policies finance majority of their short-term assets through short-term/ current liabilities and maintain a very small margin of net working capital. On

### Keywords

*Current Assets, Current Liabilities, Profitability, Working Capital, Regression Analysis*

the other extreme, lie firms with conservative working capital policy, where most of the current assets are financed through long-term funds and short-term funding has a very meager role to play. Lies between these two extremes are firms practicing moderate, or what is also termed many a times as optimum working capital policy, where firms keep an optimum balance between short-term and long-term sources of funding current assets. Aggressive working capital policy is assumed to affect the profitability of business in a positive manner, as it is one of the basic propositions of traditional finance theory that investment in long-term activities of business is more profitable than investment in short-term activities. Similarly, conservative working capital policy is assumed affect the profitability of business in a negative manner. Van Horne and Wachowicz (2004) stated that excessive level of current assets may have a negative effect of a firm's profitability, whereas a low level of current assets may lead to lowers of liquidity and stock-outs, resulting in difficulties in maintaining smooth operations.

There has been a long debate among researchers in corporate finance regarding risk/return tradeoff between different working capital policies [Pinches et al.(1973), Moyer et. al. (2003), Brigham and Ehrhardt (2004), Gitman (2005), to name a few]. Gardner et al. (1986), and Weinraub and Visscher (1998) argued that more aggressive working capital policies are associated with higher return and higher risk while conservative working capital policies are concerned with the lower risk and return. Smith (1980) also argued that working capital management is important because of its effects on the firm's profitability and risk, and consequently its value. It implies that greater the investment in current assets, the lower the risk, but also the lower the profitability obtained. In contradiction, Carpenter & Johnson (1983) empirically proved that there is no linear relationship between the level of current assets and revenue systematic risk of US firms.

Working Capital Management is also closely associated with liquidity and profitability aspects of the business. A larger investment in current assets of the firm through long-term funds enhances liquidity of the business and provides a better cushion to current liabilities. But simultaneously, it is assumed to decrease the profitability of the firm, as traditional finance theory considers liquidity and profitability as two conflicting goals of a business firm. On the other hand, a very small funding of current assets through long-term funds, though assumed to increase the profitability of business in a positive manner, could generate liquidity crunch for the business resulting in technical insolvency in long run, thereby threatening its long-term survival. An optimal level of working capital is assumed to be the one in which a balance is achieved between liquidity and profitability. It requires continuous monitoring to maintain proper level in various components of working capital i.e. cash receivables, inventory and payables etc. Lamberson (1995) pointed out that most of the financial managers' time and effort are allocated in bringing non-optimal levels of current assets and liabilities back toward optimal levels.

Further, Smith (1997) explored that a large number of business failures have been attributed to the inability of the financial managers in managing the current assets of the company. Therefore, exploring the impact of working capital practices of corporate firms on their profitability has always been an area of interest for researchers in corporate finance.

## RATIONALE OF THE STUDY

The very survival of business firms in general and private corporate firms specifically depends up on their profitability. The new millennium has brought transforming changes in economic scenario of developing countries like India and this has opened new vistas of development for private corporate firms in these countries. There are ample growth opportunities for these firms nationally and globally. But simultaneously, these firms are witnessing threats generated out of external and internal environments. So, managing profitability from each of the affecting dimensions is demand of the day. Working capital management practices have been affecting the profitability of these firms, positively or negatively. But is the story same in the new millennium as well? The rationale of this study lies in the fact that, exemplifying Reliance Industries Limited, the largest corporate firm in private sector in India, it would explore the impact of working capital management practices of Indian private corporate giants on their profitability in the considerably changed internal and external environment after the implementation of Liberalization, Privatization and Globalization policies of government of India in early nineties, which started showcasing its effect in the new millennium.

## LITERATURE REVIEW

There exist a long literature regarding researches on working capital practices and its impact on corporate profitability, though researchers widely disagree on the findings.

In a study of relationship of cash conversion cycle with firm size and profitability on firms in Turkey by Ali Uyar (2009), it was found that retail/wholesale industry has shorter cash conversion cycle than manufacturing industries. Significant negative correlation was explored between the length of cash conversion cycle and profitability of the firms registered at Turkey Stock Exchange.

In a study on impact of working capital policies and practices on the profitability of the Indian Consumer Electronic Industry, Vishnani and Shah (2007), found that though working capital policies and practices have a major impact on the company's profit performance, no established relationship existed between liquidity and profitability for the industry as a whole.

In a similar study by Afza and Nazir (2007), the relationship between the aggressive/conservative working capital policies and corporate profitability was investigated. Drawing a large sample of 263 public limited companies for seventeen industrial groups and listed at Karachi Stock Exchange and considering a period of

1998-2003, the researchers found significant differences among their working capital investment and financing policies across different industries. Moreover, it confirmed that these significant differences were remarkably stable over the period of six years of study. Finally, the study concluded with a negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment and financing policies.

Lazaridis and Tryfonidis (2006), while investigating the relationship between working capital management and corporate profitability of listed company in the Athens Stock Exchange, drawing a sample of 131 listed companies for period of 2001-2004, concluded that there was statistical significance between profitability, and the cash conversion cycle.

The importance of efficient working capital management was highlighted by Filbeck and Krueger (2005) in their study. They studied the working capital management policies of 32 non-financial industries in USA. It was found that there are significant differences between various non-financial industries regarding working capital practices and these practices change significantly within industries over time.

Deloof (2003) analyzing a sample of large Belgian firms for the period 1992-1996, concluded that Belgian firms can improve their profitability by reducing the number of days accounts receivable are outstanding and reducing inventories. It was also concluded in the same research that there exists a negative relation between accounts payable and profitability of firms. Similarly, Teruel and Solano (2005) suggested that managers could create value by reducing their firm's number of days accounts receivable and inventories and by shortening cash conversion cycle.

It was revealed by Sinha et al. (1988) in their study that inefficient management of working capital has been the major cause for the reduction in the profits of the firm. It was found that a huge amount of funds were blocked in the inventories as well as the receivables, resulting in poor profitability.

## OBJECTIVES OF THE STUDY

The basic objective of this study is to analyze the impact of working capital management practices of Reliance Industries Ltd. on its profitability. Simultaneously, the study also attempts to study the components of working capital of the respondent firm and explore the funding pattern of its working capital. Standing on the informational platforms, facts and figures of Reliance Industries Limited (RIL), the study also aimed at recommending suitable working capital suggestions for private corporate firms in India.

## ABOUT THE COMPANY

Founded in the year 1966 by Late Mr. Dhirubhai Ambani, Reliance Industries is the largest private sector company in India and is a Fortune Global 500 company. The company's basic businesses include Energy, Materials

and Value Chain. This company enjoys global leadership in its businesses as it is the largest polyester yarn and fiber producer in the world and it falls among the top ten producers in the world in major petrochemical products.

Reliance Industries Ltd. was selected for the purpose of this study as, being the largest private sector company in India, it was considered by the researcher to be true representative of corporate giants in private sector in India. Additionally, availability of required data with ease through the official website of respondent company also helped in finalizing the respondent unit.

## RESEARCH DESIGN AND METHODOLOGY

The research is exploratory in nature. An empirical investigation of impact of working capital management practices of the respondent company on its profitability has been undertaken. Secondary data has been considered for the purpose of analysis, which has been extracted from the annual reports of the company. These reports are available on the official website of the company (<http://www.ril.com/rportal/jsp/eportal/ListDownloadLibrary.jsp>). The study covers a period of 11 years from 2000-01 to 2010-11. The impact of component aspect of working capital management has been explored on the profitability. Various current assets as a part of total current assets represent the component aspect of working capital.

## RETURN ON CAPITAL EMPLOYED; THE DEPENDENT VARIABLE

Profitability as a dependent variable has been assessed on different parameters by various researchers. Researchers including Nazir and Afza (2007) and Kessevan Padachi (2007) have considered Return on Total Assets (ROTA) as a measure of corporate profitability for assessing impact of working capital management, while stood on other hand researchers like Vishnani and Shah (2009) and who considered Return on Capital Employed (ROCE) or what is also termed as Return on Investment (ROI), as a measure of profitability. Some other researchers including Begemann and Smith (1997) have considered Return on Equity (ROE), also known as Return on Net Worth or Return on Shareholders' Funds as a measure of profitability.

Return on Capital Employed (**ROCE**) is used as dependent variable for the purpose of this study. It is justified on the ground that the impact of operating decisions (working capital management) is to be explored on the overall profitability of the respondent firm. This is in the light of that fact that working capital decisions are operating decisions and henceforth they are for sure to affect the operating profitability of the firm. It is their impact on total investment in the business that will be a reflection of importance and contribution of these decisions on overall corporate profitability. With this idea, Return on Capital Employed (**ROCE**) has been considered as dependent variable for this study.

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## INDEPENDENT VARIABLES CONSIDERED FOR THE STUDY

The analysis is done on the basis of investment in various components of working capital as a part of total current assets. This included Inventory to Current Assets (**ICA**), Receivables to Current Assets (**RCA**), Cash to Current Assets (**CCA**), Other Current Assets to Current Assets (**OCACA**), and Loans & Advances to Current Assets (**LACA**) as independent variables. Along with this, Net Working Capital to Long Term Funds (**WCLTF**) and Current Assets to Total Assets Ratio (**CATA**), have also

been considered as independent variables in order to consider the impact of long term funding and investment in total current assets respectively.

## COMPONENTS OF WORKING CAPITAL: THE TREND

The table one given below exhibits the various components of Gross Working Capital of Reliance Industries Ltd. over a period of eleven years in the new millennium from 2000-01 to 2010-11. The figures in the parentheses show percentage values.

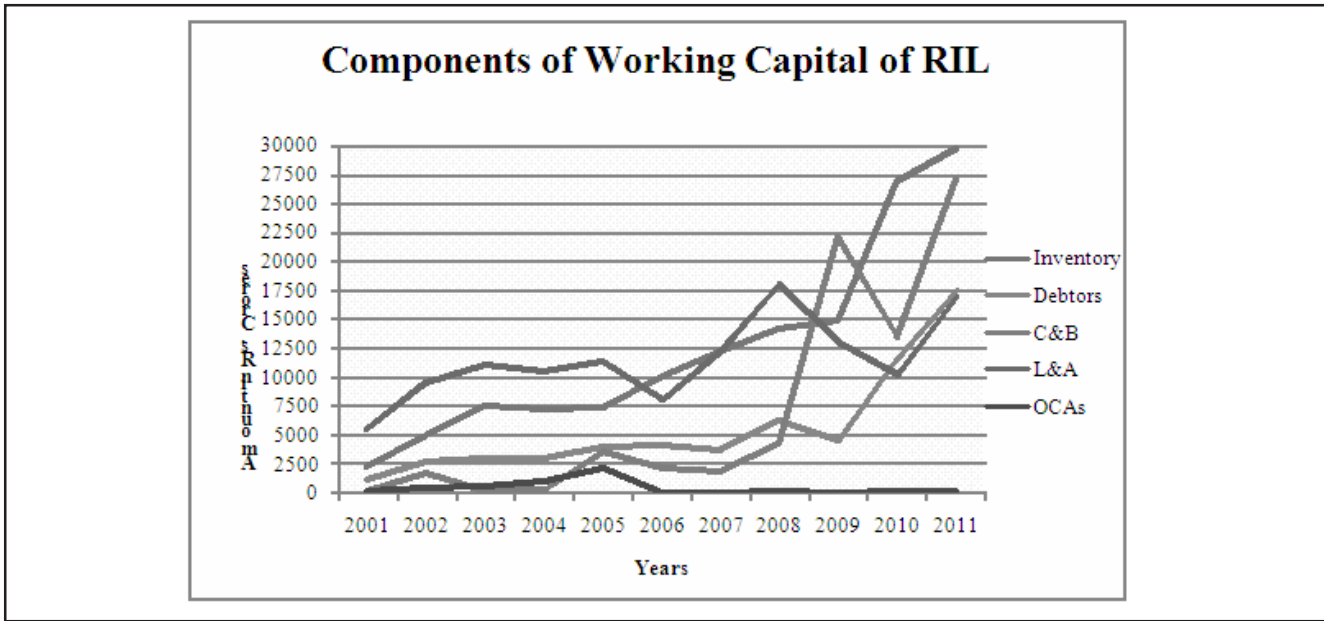
### Source: Developed for this work on the basis of various Annual Reports of RIL

As seen from the table, the value of inventory as a component of current assets has been in the range of 25.21% to 43.25%, with average of 32.83%. Similarly, receivables had been in the range of 8.36% to 19.05%, with an average value of 14.32%. This seems to be pretty unexpected as Inventory and Receivables are expected to be the majority of total current assets in terms of value and with ideal current ratio of 2:1 and Liquid Ratio of 1:1; the value of inventory is expected up to the level of as high as 50% of the current assets. As against this, Loans and Advances have been unexpectedly found to be as high as 60.32% of total current asset in the initial year, with an average component value of 38.36%, which is much higher as compared to two traditionally accepted current assets viz. Inventory and Receivables. The remaining two current assets, i.e. Cash and Bank, and Other Current Assets, have shown considerable fluctuations during the period under study. The

component value of Cash and Bank has deviated from the meager value of 0.66% (2003) to as high as 40.53% in the year 2008-09. Similarly, the value of Other Current Assets has fluctuated from the level of 0.01% in the year 2006-07 to 7.34% in the year 2004-05. So, in a nutshell, various components of current assets of Reliance Industries Ltd. had been showing varying trends. These trends are exhibited in diagram I below:



**FIGURE I: Components of Current assets of RIL**



Source: Developed for this work on the basis of various Annual Reports of RIL

A close scrutiny of the table and diagram above reveals that the value of inventory to total current assets had been below average value of 32.83% in the initial years up to 2004-05. From 2005-06 and onwards, this value had been more or less more than average value, except for the year 2008-09 (27.12%). As far as receivables are concerned, there has not been much change in its component value till the year 2007-08, but in the year 2008-09, there had been a sudden decrease in its value and it went as low as 8.36% of total current assets. As against this, its value has increased to 18.69% of current assets, registering a deviation of 123.56%, and its value during last year under study has increased to 19.05%. Cash and Bank had also been a highly fluctuating current asset for Reliance Industries Ltd. Over the period under study, its value had been deviating from 0.66% of total

current assets in the year 2002-03 to 40.53% in the year 2008-09. Its value had been considerably high during the last three years of the period under study. Other current assets appeared to be negligible part of total current assets except for the year 2004-05, when its value reached at 7.34% of total current assets. Loans and advances had been the largest component of current assets of Reliance Industries Ltd. Its value had been in the range of 40% to 60% up till 2007-08 and it decreased only during last three years of the period under study.

**WORKING CAPITAL: THE FINANCING TREND**

The Table two below exhibits the financing pattern of gross working capital of Reliance Industries Ltd. during the period under study.

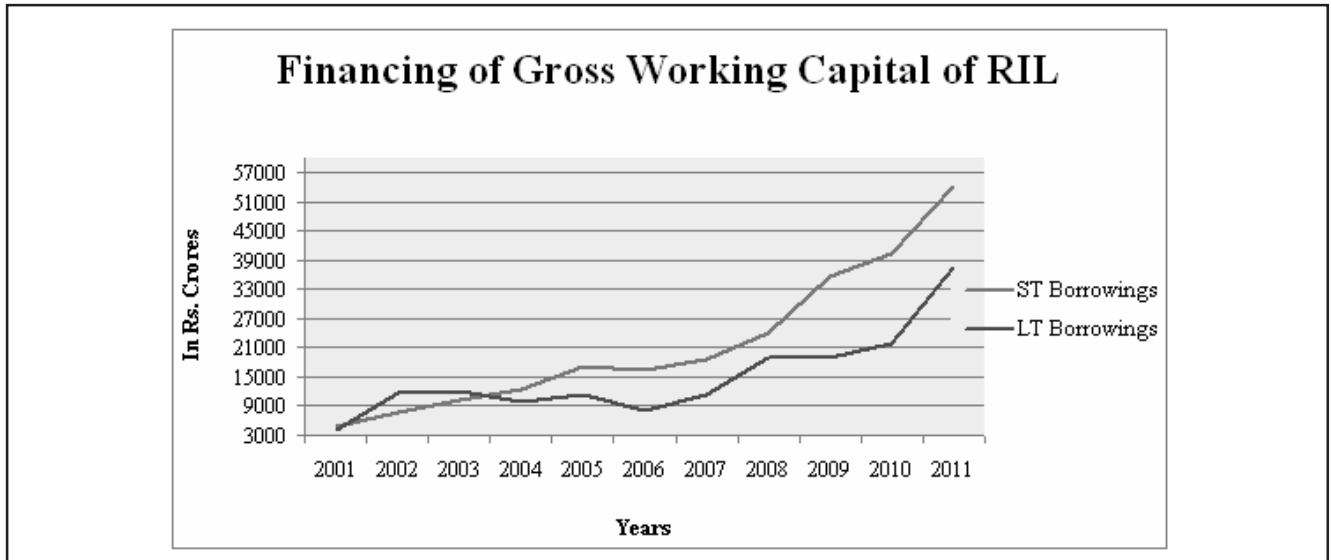
Year (End. 31/3)	Gross Working Capital	Source of Financing Gross Working Capital		% of GWC Financed Through LTFS
		Short-term	Long-term	
2001	9122.51	4974.3	4148.21	45.47
2002	19450.66	7682.83	11767.83	<b>60.50</b>
2003	22357.12	10395.72	11961.4	53.50
2004	22040.05	12285.5	9754.55	44.26
2005	28452.51	17131.52	11320.99	39.79
2006	24574.45	16454.48	8119.97	<b>33.04</b>
2007	29913.35	18578.4	11334.95	37.89
2008	42885.84	24038.09	18847.75	43.95
2009	54712.27	35701.9	19010.37	34.75
2010	62379.1	40414.83	21964.27	35.22
2011	91541.83	54220.6	37321.23	40.77
<b>AVG.</b>	<b>37039.06</b>	<b>21988.92</b>	<b>15050.14</b>	<b>40.63</b>

Source: Developed for this work on the basis of various Annual Reports of RIL

As seen from the table, on an average approx. 40% of gross working capital of Reliance Industries Ltd. had been financed out of long-term sources during the period under study. On the higher side, it had been 60.50% during the year 2001-02, and on the lower side, it had been 33.04% for the year 2005-06. It had been on the higher

side during the initial years of study, which might have affected the profitability of the company negatively due to lower investment of long-term funds in non-current/ fixed assets. These trends of financing of working capital of the company are also shown in the diagram below

**FIGURE II: Financing of Gross Working Capital of RIL**



Source: Developed for this work on the basis of various Annual Reports of RIL

**A CORELATIONAL ANALYSIS OF WORKING CAPITAL AND PROFITABILITY**

To study the impact of working capital practices of Reliance Industries Ltd. on its profitability, Karl Pearson's correlation Coefficients using SPSS software were calculated. Return on Capital Employed was considered dependent variable, as it reflects the profit earned on long-term funds invested in the business. To assess the

impact of working capital practices of respondent company, various components of current assets, long-term funding, and total investment in current assets, as discussed above, have been considered. Initially, the colinearity among the independent variables was identified by applying correlation analysis, the result of which have been shown in the matrix below and have been discussed there after.

**COORELATION MATRIX : Correlation Among Independent Variables**

Ind. Var.-	ICA	RCA	CCA	OCACA	LACA	NWCCA	WCLTF	CATA
ICA	1	.531	-.059	-.445	-.453	-.499	-.468	-.488
RCA		1	-.015	-.130	-.430	-.121	.023	.160
CCA			1	-.322	-.828**	-.469	-.364	-.472
OCACA				1	.361	.266	.516	.662*
LACA					1	.643*	-.459	.512
NWCCA						1	.834**	.733*
WCLTF							1	.840**
CATA								1

\*\* - Correlation is significant at 0.01 level. \* - Correlation is significant at 0.05 level

Dependent Variable: Return on Capital Employed (ROCE)

ICA: Inventory to Current Assets, RCA: Receivables to current Assets, CCA: Cash to Current Assets, OCACA: Other Current Assets to Current Assets and LACA: Loans & Advances to Current Assets, WCLTF: Working Capital to Long-term Funds, CATA: Current Assets to Total Assets.

As seen from the correlation matrix above, there exist a significant co-linearity among Cash to Current Assets (CCA) and Loans and Advances to Current Assets (LACA), which was also found to be significantly correlated with Working Capital to Long-term Funds (WCLTF). Similarly, it was also found that Other Current Assets to Current Assets (OCACA) is significantly correlated with Current Assets to Total Assets (CATA), which was also found to be significantly correlated with Working Capital to Long-term Funds (WCLTF). So, in order to overcome this problem of co-linearity, Loans and Advances to Current Assets (LACA) and Other Current Assets to Current Assets (OCACA) were not considered for further analysis for the reasons that the first one (LACA) is not considered as a primary current asset of business firm, and the second one (OCACA) is a very meager component of the respondent company. Further, to overcome the remaining co-linearity between NWCCA and WCLTF, it was decided to remove NWCCA from further analysis for the reasons that NWCCA and WCLTF, both reflect the long-term funding of working capital. The

descriptive statistics of finally considered independent variables and dependent variable is shown in table below:

Variable	Mean	Std. Deviation
ROCE	15.6818	2.58837
ICA	12.8282	12.78908
RCA	15.4545	5.00727
CCA	32.8318	6.54480
CATA	14.3182	3.03816
WCLTF	29.5455	4.48026

### WORKING CAPITAL AND PROFITABILITY: MULTIPLE REGRESSION ANALYSIS

To further analyze the impact of considered independent variables on profitability of Reliance Industries Ltd., Multiple Regression was applied. The findings of the analysis and their implications are discussed hereinafter.

### MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Durbin-Watson
1	.921	.849	.698	1.42291	2.326

Dependent Variable: Return on Capital Employed (ROCE)

Predictors: (Constant), ICA: Inventory to Current Assets, RCA: Receivables to Current Assets, CCA: Cash to Current Assets, and CATA: Current Assets to Total Assets, WCLTF: Working Capital to Long-term Funds.

The model obtained shows that there is a strong correlation between observed and predicted values of Return on Capital Employed of respondent company and as high as 84.9% variation in value of ROCE is explained by the independent variables considered in the model. The Durbin-Watson value of 2.326 also confirmed the

absence of first order/serial auto-correlation. So, this model appears to be considerably good for assessing the impact of independent variables on return on capital employed of Reliance Industries Ltd. To further estimate the goodness of fit of the model, ANOVA values were calculated, which are exhibited below:

### ANOVA

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	56.873	5	11.375	5.618	.041
Residual	10.123	5	2.025		
Total	66.996	10			

Dependent Variable: Return on Capital Employed (ROCE)

Predictors: (Constant), ICA: Inventory to Current Assets, RCA: Receivables to Current Assets, CCA: Cash to Current Assets, and CATA: Current Assets to Total Assets, WCLTF: Working Capital to Long-term Funds.

The significance value of .041 confirms that the model is a good fit for predicting the value of ROCE for Reliance Industries Ltd. on the basis of values of independent variables considered in the model. To further explore the

relative importance of each of the independent variable considered in the model, coefficient values were calculated, which are exhibited below:

## COEFFICIENTS

Model 1	Unstandardized Coefficients		Stand. Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	19.070	9.253		2.061	.094
CCA	-0.176	0.054	-.871	-3.259	.022
WCLTF	-0.495	0.168	-.957	-2.950	.032
ICA	-0.160	0.154	-.403	-1.034	.349
RCA	0.202	0.275	.237	0.736	.495
CATA	0.300	0.291	.519	1.030	.350

Dependent Variable: Return on Capital Employed (ROCE)

Predictors: (Constant), ICA: Inventory to Current Assets, RCA: Receivables to Current Assets, CCA: Cash to Current Assets, and CATA: Current Assets to Total Assets, WCLTF: Working Capital to Long-term Funds.

A close study of the coefficient table above reveals that Cash to Current Assets and Working Capital to Long-term Funds are significantly associated with dependent variable and both have a negative impact on the profitability of Reliance Industries Ltd., measured in terms of Return on Capital Employed (ROCE). Cash to Current Assets has appeared as an important predictor, followed by Working Capital to Long-term Funds. For the respondent company, following regression equation can be used to predict the value of dependent variable, i.e. return on Capital Employed:

$$\text{ROCE} = 19.07 - .176\text{CCA} - 0.495\text{WCLTF} + e$$

As the coefficients of remaining three independent variables are not found significant at 5% level, these have not been considered while framing the final predicting equation.

### DISCUSSION AND RECOMMENDATIONS

The profitability of Reliance Industries Ltd. measured in terms of Return on Capital Employed, is found to be negatively affected by some of its working capital practices, though most of the primary components of current assets viz. Inventory and Receivables, are found to be playing no significantly role in affecting the profitability of respondent company measured in terms of Return on Capital Employed.

Cash, as a component of current assets of the company, is negatively affecting its profitability. The direction of correlation of Cash to Current Assets (CCA) with ROCE, being negative, implies that more this ratio is, less is the profitability of company. This is in line with traditional finance theory, as Cash is traditionally assumed to be an idle non-earning asset; and an increase in cash component of current assets is expected to reduce the profitability. The first major finding of this research work is in line with the traditional finance theory.

During recent past, the company had been maintaining a very high amount of Cash and Bank Balance (refer Table I). If feasible, Reliance Industries Limited should attempt to cut down on its size of this component of its

current assets, which had been as high as 40.53% of its total current assets during 2008-09.

The second major finding of this research work is that long-term financing of working capital (WCLTF) is also found to be negatively affecting the profitability of the company. One of the basic presumptions of finance theory is that long-term investment in business activities is more profitable as compared to short-term investment, and this finding is in line with the same. For the respondent company, it implies that the more is the funding of working capital through long-term sources of funds, the less is the profitability, other things remaining the same. It implies that the respondent company should attempt to further optimize its working capital policy by decreasing investment of long-term funds in short-term/operational activities of business.

### CONCLUSION

Working Capital Management practices of Reliance Industries Ltd. and its Return on Capital Employed has exhibited relationship on negative dimensions. Out of the 8 predictors initially considered for the study, only two including Cash to Current Assets and Working Capital to Long-term Funds were found to be affecting the profitability of respondent company, and that too in a negative manner. For empirically investigating the same, Multiple Regression Analysis was carried out. The result of this analysis explored that the arrived model is a good fit and explains as high as 84.9% of the deviation in the value of dependent variable. This analysis further explored that Cash to Current Assets is the most important predictors, followed by Working Capital to Long-term Funds for the profitability measured in terms of Return on Capital Employed. The other independent variables considered in the model were found to be generating no significant effect on profitability of the respondent company, Reliance Industries Ltd.

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