

UNDERSTANDING THE WORKING CAPITAL FINANCING STRATEGY (A CASE STUDY OF LUPIN LIMITED)

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Abstract: Working capital management as a financial strategy has its effects on liquidity as well as profitability of the firm. The present study investigates the relationship among the aggressive/conservative working capital policies and profitability of Lupin Limited for the period of 2010-2014. The effect of different variables of working capital management including current ratio and collection days on profitability was used for analysis. The study shows that there is a positive correlation between liquidity and profitability of the firm. It indicates that the investment in current assets lies in such a specified domain that increase in liquidity leads to an increase in profitability and vice-versa. The relationship between cash conversion cycle and ROCE indicate positive but insignificant relationship. Thus, the management may increase its investment in current assets up to that point of liquidity-profitability frontier where the curve changes its curvature from zero to negative because after that point the relationship between liquidity and profitability would become negative which is not desirable. The study investigated the relationship between the aggressive/conservative working capital policies of Lupin Ltd. We found a positive relationship between the profitability measures of the company and degree of conservativeness of working capital investment and financing policies. The company yields a positive return if it follows a conservative working capital policy i.e. with more short-term funds.

Key words: Working capital, current assets, liquidity, profitability. **JEL Classification:** G30, G32

Introduction

It is often observed that whenever the financial analysis of a company is done, more emphasis is given on the profitability of the business rather than on its liquidity. Of course, this is quite obvious, as the most important financial objective of any business is to earn profit. So, the managers lay more emphasis towards profitability. But another significant variable is liquidity which means the ability of a company to honour short term financial obligations. If the company which is not able to honour its short-term financial obligations, it moves a step ahead towards its bankruptcy. Liquidity management, therefore, involves the amount of investments in liquid assets to meet the short-term maturing obligation of creditors and others.

The developing economics are generally faced with the problem of inefficient utilization of resources available to them. Capital is the scarcest productive resource in such economies and proper utilization of these resources promotes the rate of growth, cuts down the cost of production and above all improves the efficiency of the productive system. Fixed capital and working capital are the dominant contributors to the total capital of the developing country. Fixed capital investment generates productive capacity whereas working capital makes the utilization of that capacity possible. Thus, the study of working capital behaviour occupies an important place in financial management. The earlier emphasis of financial management was more on long-term financial decisions. Working capital management which is concerned with short-term financial decisions appears to have been relatively neglected in the literature of finance.

Working capital management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the relationship that exists between them. The term current assets refer to those assets which is in ordinary course of business can be, or will be converted into cash within one year without undergoing a diminution in value and without disrupting the operation of the firms. Examples are cash, marketable securities, account

receivables and inventory. On the other hand, current liabilities are those liabilities which are intended, at their inception to be paid in the ordinary course of business in a year out of current assets or earnings of the concern. The basic current liabilities are account payables, bills payable, bank overdraft and outstanding expenses. Efficient management of working capital is a fundamental part of the overall corporate strategy to create shareholders' value.

Historical Background of the Case Study

Lupin Limited is a transnational pharmaceutical company based in Mumbai. It is the 2nd largest Indian pharma company by market capitalization; the 14th largest generic pharmaceutical company globally and; the 5th largest generic pharmaceutical company in the US by prescription-led market share. It has the distinction of being the fastest growing generic pharmaceutical player in the two largest pharmaceutical markets of the world – the US and Japan; and is the 5th largest and the fastest growing generic pharmaceutical player in South Africa.

Lupin was founded in 1968 by Dr. Desh Bandhu Gupta, then an Associate Professor at BITS-Pilani, Rajasthan. Named after the Lupin flower because of its inherent qualities and what it personifies and stands for, the company was created with a vision to fight life threatening infectious diseases and to manufacture drugs of the highest social priority.

Lupin first gained recognition when it became one of the world's largest manufacturers of tuberculosis drugs. The company today has a significant market share in key markets in the Cardiovascular (prils and statins), Diabetology, Asthma, Pediatrics, CNS, GI, Anti-Infectives and NSAIDs therapy segments. It also has a global leadership position in the Anti-TB and Cephalosporin segments. The company's R&D endeavours have resulted in significant progress in its NCE program. Lupin's foray into Advanced Drug Delivery Systems has resulted in the development of platform technologies that are being used to develop value-added generic pharmaceuticals. Its manufacturing facilities, spread across India and Japan, have played a critical role in enabling the company realizes its global aspirations. Benchmarked to International standards, these facilities are approved by international regulatory agencies including the US FDA, UK MHRA, Japan's MHLW, TGA Australia, WHO, and the MCC South Africa.

Statement of Problem

The relationship between working capital and the profitability has been an interesting debate in financial management. Theoretically working capital decision affects both liquidity and profitability. Excess of Investment in working capital may result in low profitability and lower investment may result in poor liquidity. Management need to trade-off between liquidity and profitability to maximize shareholders wealth. Every organization whether, profit oriented or not, irrespective of size and nature of business, requires necessary amount of working capital. Working capital is the most crucial factor for maintaining liquidity, survival, solvency and profitability of business (Mukhopadhyay, 2004). Usually, it was observed that, if a firm wants to take a bigger risk for bumper profits and losses, it minimises the dimension of its working capital in relation to the revenues it generates. If it is willing to improve its liquidity, that in turn raises the level of its working capital. Nevertheless, this technique might tend to reduce the sales volume and consequently, it would affect the profitability. Thus, a company needs to have a striking balance between the liquidity and the profitability. In order to maintain high profitability levels companies might need to forfeit its solvency for maintaining relatively low levels of CA. As soon as the companies start doing so, its profitability would improve as less amount of money would be fastened up to the idle CA and their solvency would be in danger. A firm may adopt an aggressive working capital management policy with a low level of current assets as percentage of total assets or it may also use for the financing decisions of the firm in the form of high level of current liabilities as percentage of total liabilities. Excessive levels of current assets may have a negative effect on the firm's profitability whereas a low level of current assets may lead to lower

level of liquidity and stockouts resulting in difficulties in maintaining smooth operations (Van Horne and Wachowicz 2004).

In general, current assets are considered as one of the important component of total assets of a firm. A firm may be able to reduce the investment in fixed assets by renting or leasing plant and machinery, whereas, the same policy cannot be followed for the components of working capital. The high level of current assets may reduce the risk of liquidity associated with the opportunity cost of funds that may have been invested in long-term assets. The impact of working capital policies on profitability is highly important, however, a little empirical research has been carried out to examine this relationship. This paper investigates the potential relationship of aggressive/conservative policies with the accounting and market measures of profitability as well as the risk factor of Lupin Limited. The present study is expected to contribute to better understand these policies and their impact on profitability especially in the emerging markets like India.

Working Capital Financing Approaches

There are three basic approaches to determine an appropriate financing mix:

- Hedging approach, also called the matching approach,
- Conservative approach,
- Aggressive approach.

Hedging Approach/ Matching Approach

- According to this approach, the maturity of the sources of the funds should match the nature of the assets to be financed. For the purpose of analysis, the current assets can be broadly classified into two classes-
 - Those which are required in a certain amount for a given level of operation and, hence, do not vary over time.
 - Those which fluctuate over time.
- The Hedging approach suggests that long term funds should be used to finance the fixed portion of current assets requirements in a manner similar to the financing of fixed assets.
- The purely temporary requirements, that is, the seasonal variations over and above the permanent financing needs should be appropriately financed with short term funds.
- This approach, therefore, divides the requirements of total funds into permanent and seasonal components, each being financed by a different source.

Conservative Approach

- This approach suggests that the estimated requirement of total funds should be met from long term sources; the use of short term funds should be restricted to only emergency situations or when there is an unexpected outflow of funds.
- Long-Term Financing Benefits
 - Less worry in re financing short-term obligations
 - Less uncertainty regarding future interest costs
- Long-Term Financing Risks
 - Borrowing more than what is necessary
 - Borrowing at a higher overall cost (usually)

- Result:
 - Manager accepts *lesser* expected profits in exchange for taking less risk

Aggressive approach

- A working capital policy is called an aggressive policy if the firm decides to finance a part of the permanent working capital by short term sources. The aggressive policy seeks to minimize excess liquidity while meeting the short term requirements. The firm may accept even greater risk of insolvency in order to save cost of long term financing and thus in order to earn greater return.
- Short-Term Financing Benefits
 - Financing long-term needs with a lower interest cost than short-term debt
 - Borrowing only what is necessary
- Short-Term Financing Risks
 - Refinancing short-term obligations in the future
 - Uncertain future interest costs
- Results:
 - Manager accepts *greater* expected profits in exchange for taking greater risk

Research question

From the foregoing, the only research question for this study is as follows:

Is it better to be aggressive or conservative in managing working capital?

Objective of the study

The objective of this study is to carry out empirical investigation whether it is better to be aggressive or conservative in formulating strategies for working capital management.

Significance of the study

This study investigates the potential relationship of aggressive/conservative policies with the accounting and market measures of profitability of Lupin Limited. The study is expected to contribute to better understand the policies of formulating strategies on the management of working capital and their impact on profitability especially in the emerging market in India. Equally important, the outcome of the study will be of benefit to managers in organization on what strategy to employ regarding working capital management in order to improve the performance of the organization.

Formulation of hypotheses

Since the objective of this study is to carry out empirical investigation on whether it is better to be aggressive or conservative in formulating strategies for working capital management, the study makes a set of testable hypotheses (the Null hypothesis H_0 versus the Alternative hypothesis H_1)

Hypothesis 1

H_0 : There is no relationship between working capital management and profitability of Lupin Ltd.

H_1 : There is relationship between working capital management and profitability of Lupin Ltd.

Literature Review

This section is devoted to the review of the researches that had been carried out by other researchers on this topic-The study of working capital management as a financial strategy.

Many researchers have studied financial ratios as part of working capital management, very few, however, have discussed the working capital policies in specific. Filbeck and Krueger (2005) highlighted the importance of efficient of working capital management by carrying out analysis of working capital management policies of 32 non-financial industries in United States of America. The result revealed that significant differences exist between industries in working capital practice overtime.

However, Weinraub and Visscher (1998) have discussed the issue of aggressive and conservative working capital management policies by using quarterly data for a period of 1984 to 1993 of US firms. Their study looked at ten diverse industry groups to examine the relative relationship between their aggressive/conservative working capital policies. The authors concluded that the industries had distinctive and significantly different working capital management policies. The study also showed a high and significant negative correlation between industry assets and liabilities policies and found that when relatively aggressive working capital asset policies are followed, they are balanced by relatively conservative working capital financial policies.

Later on, Deloof (2003) analyzed a sample of large Belgian firms during the period 1992-1996 and the result confirmed that Belgian firms can improve their profitability by reducing the number of days accounts receivable are outstanding and reducing inventories. Teruel and Solano (2005) suggested that managers can create value by reducing their firms' number of days account receivables and inventories. Similarly, shortening the cash conversion cycle also improves the firm's profitability.

In the Pakistani context, Rehman (2006) investigated the impact of working capital management on the profitability of 94 Pakistani firms listed at Islamabad Stock Exchange (ISE) for a period of 1999-2004. He studied the impact of different variables of the working capital management including Average payment period and cash conversion cycle on the Net Operating profit of firms. He concluded that there is a strong negative relationship between above working capital ratios and profitability of firms. Furthermore, managers can create a positive value for the shareholders by reducing the cash conversion cycle up to an optimal level. Similar studies on working capital and profitability includes Smith and Begemann (1997), Howorth and Westhead (2003), Ghosh and Maji (2004), Eljelly (2004) and Lazaridis and Tryfonidis (2006).

Afza and Nazir (2007) conducted an investigation into the relationship between aggressive/ conservative working capital policies for 17 industrial groups and a large sample of 263 public limited companies listed on the Karachi Stock Exchange for a period of 1998-2003. The study revealed significant differences among their working capital investment and financing policies across different industries.

Finally, Falope and Jailor (2009) conducted investigation using a sample of 50 Nigerian quoted non-financial firms for the period 1996-2005. They found a significant negative relationship between net operating profit and the average collection period, inventory turnover in days, average payment period and cash conversion cycle.

Luo et al. (2009) stated that if the value of the firm enhances the cash cycle will decrease. Gill et al. (2010) found that if the firm is maintaining it accounts receivable, accounts payable and inventories at optimum level the firm will generate maximum profit. Dong & Su (2010) observed significant association of cash conversion cycle with the return on investments of the companies.

Sharma & Kumar (2010) found that in Indian firm length of cash cycle and profitability have positive relationship between them. Randall & Farris (2010) argued that by implementing a collaborative cash to cash management cycle by adopting weighted average cost of capital will increase the profitability. Johnson & Templar (2011) stated that return on capital employed and length of cash cycle would be enhanced by change of proxy. Ebaid (2011) examined that the current cash flows have significant impact to enhance the profitability of the firm.

Earlier literature has explored different variables representing liquidity and its effect on profitability and examined the relationship of accounts payable management, accounts receivables management, inventory management and cash to cash cycle management with profitability management, providing with different results as per how the length of cash cycle has been affecting profitability using different proxies for profitability

Methodology, sources of data and sampling design

The study employed the use of secondary data which is collected from the website moneycontrol.com and annual reports of Lupin Ltd. from 2010-2014. The collected data from this source have been compiled and used with due care as per the requirement of the study. The choice of secondary data is informed because data from such a source is free from bias, accurate and provides opportunity for replication. The sampling method adopted for this study is purposeful sampling.

Variables

The variables used in this study about working capital management as a financial strategy are as follows:

Current ratio and cash conversion cycle as measurement of aggressiveness of working capital are independent variables.

Operating profitability that is, a measure of profitability of a firm and return on capital employed are used as dependable variable.

Number of days accounts receivable used as proxy for the collection policy is an independent variable. It is calculated as $(\text{average debtors} \times 365) / \text{sales}$.

Number of days accounts payable used as proxy for the payment policy is an independent variable. It is calculated as $(\text{average creditors} \times 365) / \text{Net Purchases}$.

The cash conversion cycle used as a comprehensive measure of working capital management is another independent variable. It is calculated as $(\text{number of day's accounts receivable} + \text{number of day's inventory used} - \text{number of days accounts payable})$.

Data presentation

Profit & Loss account of Lupin					
(Rs. In Crores)					
	Mar '14	Mar '13	Mar '12	Mar '11	Mar '10
	12 mths				
Income					
Sales Turnover	8,939.38	7,122.51	5,384.83	4,494.88	3,723.96
Excise Duty	0	0	0	0	33.87
Net Sales	8,939.38	7,122.51	5,384.83	4,494.88	3,690.09
Other Income	415.38	23.31	3.49	16.58	-14.12
Stock Adjustments	76.21	182.44	0	0	-1.98
Total Income	9,430.97	7,328.26	5,388.32	4,511.46	3,673.99
Expenditure					
Raw Materials	3,223.46	2,924.46	2,377.44	1,921.18	1,596.77
Power & Fuel Cost	309.36	299.76	257.13	196.83	141.68
Employee Cost	844.32	713.08	581.22	491.23	376.55
Other Manufacturing Expenses	0	0	0	0	115.15
Selling and Admin Expenses	0	0	0	0	562.13
Miscellaneous Expenses	1,726.12	1,483.73	1,139.71	927.2	54.72
Preoperative Exp Capitalised	0	0	0	0	0
Total Expenses	6,103.26	5,421.03	4,355.50	3,536.44	2,847.00
	Mar '14	Mar '13	Mar '12	Mar '11	Mar '10
	12 mths				
Operating Profit	2,912.33	1,883.92	1,029.33	958.44	841.11
PBDIT	3,327.71	1,907.23	1,032.82	975.02	826.99
Interest	20.99	33.28	28.68	27.57	36.76
PBDT	3,306.72	1,873.95	1,004.14	947.45	790.23
Depreciation	167.63	150.14	131.96	104.28	81.57
Other Written Off	0	0	0	0	0
Profit Before Tax	3,139.09	1,723.81	872.18	843.17	708.66
Extra-ordinary items	0	0	0	0	-1.08
PBT (Post Extra-ord Items)	3,139.09	1,723.81	872.18	843.17	707.58
Tax	814.87	463.38	200.34	33.7	59.73
Reported Net Profit	2,324.22	1,260.43	804.37	809.98	648.93
Total Value Addition	2,879.80	2,496.57	1,978.06	1,615.26	1,250.23
Preference Dividend	0	0	0	0	0
Equity Dividend	269.01	179.01	142.92	133.86	120.07
Corporate Dividend Tax	24.78	30.43	23.19	21.75	20.12
Per share data (annualised)					
Shares in issue (lakhs)	4,483.76	4,475.29	4,466.42	4,462.01	889.44
Earning Per Share (Rs)	51.84	28.16	18.01	18.15	72.96
Equity Dividend (%)	300	200	160	150	135
Book Value (Rs)	155.65	108.3	83.61	70.66	284.51

Balance Sheet of Lupin		(Rs.in Crores)				
		Mar '14	Mar '13	Mar '12	Mar '11	Mar '10
		12 mths	12 mths	12 mths	12 mths	12 mths
Sources Of Funds						
Total Share Capital		89.68	89.51	89.33	89.24	88.94
Equity Share Capital		89.68	89.51	89.33	89.24	88.94
Share Application Money		0	0	0	0	0
Preference Share Capital		0	0	0	0	0
Reserves		6,889.36	4,757.20	3,645.08	3,063.42	2,441.61
Revaluation Reserves		0	0	0	0	0
Networth		6,979.04	4,846.71	3,734.41	3,152.66	2,530.55
Secured Loans		50	411.3	580.82	637.46	704
Unsecured Loans		89.4	143.99	411.83	342	202.81
Total Debt		139.4	555.29	992.65	979.46	906.81
Total Liabilities		7,118.44	5,402.00	4,727.06	4,132.12	3,437.36
		Mar '14	Mar '13	Mar '12	Mar '11	Mar '10
		12 mths	12 mths	12 mths	12 mths	12 mths
Application Of Funds						
Gross Block		3,056.96	2,762.91	2,335.41	1,869.09	1,616.52
Less: Accum. Depreciation		877.5	749.26	627.93	514.46	425.13
Net Block		2,179.46	2,013.65	1,707.48	1,354.63	1,191.39
Capital Work in Progress		267.05	240.12	357.33	442.09	140.83
Investments		1,163.66	688.04	687.29	680.88	724.07
Inventories		1,372.24	1,330.83	1,123.56	841.11	713.7
Sundry Debtors		2,859.92	1,874.27	1,490.80	1,234.28	916.59
Cash and Bank Balance		146.28	20.12	19.2	37.46	36.53
Total Current Assets		4,378.44	3,225.22	2,633.56	2,112.85	1,666.82
Loans and Advances		810.35	878.7	773.05	621.32	665.79
Fixed Deposits		0	0	0	0	0.89
Total CA, Loans & Advances		5,188.79	4,103.92	3,406.61	2,734.17	2,333.50
Deferred Credit		0	0	0	0	0
Current Liabilities		1,367.80	1,332.67	1,193.81	880.29	785.62
Provisions		312.72	311.06	237.84	199.36	166.81
Total CL & Provisions		1,680.52	1,643.73	1,431.65	1,079.65	952.43
Net Current Assets		3,508.27	2,460.19	1,974.96	1,654.52	1,381.07
Miscellaneous Expenses		0	0	0	0	0
Total Assets		7,118.44	5,402.00	4,727.06	4,132.12	3,437.36
Contingent Liabilities		538.52	484.51	557.28	235.67	113.7
Book Value (Rs)		155.65	108.3	83.61	70.66	284.51

Key Financial Ratios of Lupin (Rs.in Crores)					
	Mar '14	Mar '13	Mar '12	Mar '11	Mar '10
Investment Valuation Ratios					
Face Value	2	2	2	2	10
Dividend Per Share	6	4	3.2	3	13.5
Operating Profit Per Share (Rs)	64.95	42.1	23.05	21.48	94.57
Net Operating Profit Per Share (Rs)	199.37	159.15	120.56	100.74	414.88
Free Reserves Per Share (Rs)	--	--	--	--	264.48
Bonus in Equity Capital	44.77	44.85	44.94	44.99	45.14
Profitability Ratios					
Operating Profit Margin(%)	32.57	26.45	19.11	21.32	22.79
Profit Before Interest And Tax Margin(%)	29.34	24.26	16.65	18.93	20.5
Gross Profit Margin(%)	30.7	24.34	16.66	19	20.58
Cash Profit Margin(%)	26.63	19.73	14.91	20.25	20.47
Adjusted Cash Margin(%)	26.63	19.73	14.91	20.25	20.47
Net Profit Margin(%)	24.84	17.63	14.92	17.95	17.52
Adjusted Net Profit Margin(%)	24.84	17.63	14.92	17.95	17.52
Return On Capital Employed(%)	44.39	32.52	19.05	21.07	22.49
Return On Net Worth(%)	33.3	26	21.53	25.69	25.64
Adjusted Return on Net Worth(%)	33.3	26	17.99	25.67	26.74
Return on Assets Excluding Revaluations	155.65	108.3	83.61	70.66	284.51
Return on Assets Including Revaluations	155.65	108.3	83.61	70.66	284.51
Return on Long Term Funds(%)	45.12	36.03	23.28	25.8	28.96
Liquidity And Solvency Ratios					
Current Ratio	2.81	1.59	1.19	1.1	0.96
Quick Ratio	2.27	1.69	1.59	1.75	1.68
Debt Equity Ratio	0.02	0.11	0.27	0.31	0.36
Long Term Debt Equity Ratio	--	0.01	0.04	0.07	0.06
Debt Coverage Ratios					
Interest Cover	150.55	52.8	31.41	31.58	27.25
Total Debt to Owners Fund	0.02	0.11	0.27	0.31	0.36
Financial Charges Coverage Ratio	158.54	57.31	36.01	35.37	23.25
Financial Charges Coverage Ratio Post Tax	119.72	43.38	33.65	34.16	20.87

Management Efficiency Ratios					
Inventory Turnover Ratio	6.51	5.35	4.79	5.34	5.7
Debtors Turnover Ratio	3.78	4.23	3.95	4.18	4.54
Investments Turnover Ratio	6.51	5.35	4.79	5.34	5.7
Fixed Assets Turnover Ratio	2.93	2.59	2.32	2.42	2.29
Total Assets Turnover Ratio	1.26	1.32	1.14	1.09	1.08
Asset Turnover Ratio	1.43	1.41	1.22	1.19	1.28
Average Raw Material Holding	--	--	--	--	87.13
Average Finished Goods Held	--	--	--	--	34.38
Number of Days In Working Capital	143.92	126.07	138.55	139.32	134.74
Profit & Loss Account Ratios					
Material Cost Composition	36.05	41.05	44.15	42.74	43.27
Imported Composition of Raw Materials Consumed	38.3	38.35	38.86	42.58	44.72
Selling Distribution Cost Composition	--	--	--	--	9.72
Expenses as Composition of Total Sales	70.55	62.82	60.25	59.05	58.35
Cash Flow Indicator Ratios					
Dividend Payout Ratio Net Profit	11.57	16.61	20.65	19.21	21.6
Dividend Payout Ratio Cash Profit	10.79	14.84	17.74	17.02	19.19
Earning Retention Ratio	88.43	83.39	75.28	80.78	79.29
Cash Earning Retention Ratio	89.21	85.16	79.34	82.98	81.52
Adjusted Cash Flow Times	0.06	0.39	1.23	1.07	1.2
	Mar '14	Mar '13	Mar '12	Mar '11	Mar '10
Earnings Per Share	51.84	28.16	18.01	18.15	72.96
Book Value	155.65	108.3	83.61	70.66	284.51

Variables	2010	2011	2012	2013	2014
Profitability = Operating Profit	22.79	21.32	19.11	26.45	32.57
ARP = Average Debtors x 365/Net Sales	80.40	87.33	92.36	86.22	96.65
ICP = Average Inventory x 365/Net Sales	70.70	63.13	66.59	62.89	55.18
APP = Average Creditors x 365/Net Purchases	179.83	156.84	163.82	155.32	152.91
CCC = ARP + ICP - APP	-28.73	-6.39	-4.88	-6.21	-1.08
Average Debtors	812.83	1075.44	1362.54	1682.54	2367.10
Net Sales	3690.09	4494.88	5384.83	7122.51	8939.38
Average Creditors (current liabilities)	785.62	880.29	1193.81	1332.67	1367.80
Net Purchases = Closing Inventory + Raw material consumed - Opening inventory	1594.59	2048.59	2659.89	3131.73	3264.87
Average Inventories	714.79	777.41	982.34	1227.20	1351.54
Current Ratio = Current Assets/ Current Liabilities	0.96	1.10	1.19	1.59	2.81

Data Analysis

The above table shows that in all the years, the company has a negative cash conversion cycle. This means that the company doesn't pay its suppliers until it receives payment from the debtors and therefore, it does not have a need to hold very much inventory and still hold onto its money for a longer period of time. It should be noted that you can have a negative cash conversion cycle. If this occurs it means that you are selling your inventory and collecting your receivables before you have to pay your payables. Going beyond the above analysis, we have analyzed the data using Pearsonian Coefficient of Correlation. The formula is given below:

$$r = \frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum(X - \bar{X})^2 \sum(Y - \bar{Y})^2}}$$

Relationship between Current Ratio (X) and Operating Profit Margin (Y)							
YEAR	X	Y	(X - \bar{X})	(Y - \bar{Y})	(X - \bar{X}) ²	(Y - \bar{Y}) ²	(X - \bar{X})(Y - \bar{Y})
2010	0.96	22.79	-0.57	-1.66	0.325	2.749	0.94506
2011	1.10	21.32	-0.43	-3.13	0.185	9.784	1.34504
2012	1.19	19.11	-0.34	-5.34	0.116	28.49	1.81492
2013	1.59	26.45	0.06	2.00	0.004	4.008	0.12012
2014	2.81	32.57	1.28	8.12	1.638	65.97	10.39616
TOTAL	7.65	122.24	0	0	2.267	111.0024	14.6213

By applying the above formula, the obtained value of 'r' is 0.92

Relationship between Cash Conversion Cycle (X) and Return on Capital Employed (Y)							
YEAR	X	Y	(X - \bar{X})	(Y - \bar{Y})	(X - \bar{X}) ²	(Y - \bar{Y}) ²	(X - \bar{X})(Y - \bar{Y})
2010	-28.73	22.49	-19.35	-5.41	374.5	29.311	104.771728
2011	-6.39	21.07	2.99	-6.83	8.9281	46.704	-20.419992
2012	-4.48	19.05	4.90	-8.85	23.99	78.393	-43.366892
2013	-6.21	32.52	3.17	4.62	10.036	21.307	14.623488
2014	-1.08	44.39	8.30	16.49	68.857	271.79	136.800828
TOTAL	-46.89	139.52	0.00	0.00	486.31	447.5	192.40916

By applying the above formula, the obtained value of 'r' is 0.41

Data interpretation

The above calculations show that the correlation between current ratio and operating profit margin is positive and significant, which is very uncommon. The study shows that there is

a positive correlation between liquidity and profitability of the firm. It indicates that the investment in current assets lies in such a specified domain that increase in liquidity leads to an increase in profitability and vice-versa. The relationship between cash conversion cycle and ROCE indicate positive but insignificant relationship. Thus, the management may increase its investment in current assets up to that point of liquidity-profitability frontier where the curve changes its curvature from zero to negative because after that point the relationship between liquidity and profitability would become negative which is not desirable. Thus, liquidity-profitability analysis throws some light on the path of investment in current assets by which financial managers get an insight into the effect of their decisions regarding working capital investment in the way of achieving short term as well as long term goal of the organization. Hence our result accepts the null hypothesis stating that there is a positive relationship between working capital and profitability.

Conclusion

Liquidity is an attribute that signifies the capacity to meet financial obligations as and when required. The importance of liquidity to meet the current obligations as and when they become due for payment can hardly be over emphasized. A firm should maintain adequate level of working capital to meet the current obligations and maintain business operations. The effective management of working capital requires both medium-term planning and immediate reactions to the fast changes taking in the present business environment. Working capital management is the functional area of finance that covers all the current accounts of the firm. It is concerned with the adequacy of current assets as well the level of risk posed by current liabilities. Efficient handling of company liquidity provides goodwill about the company as well as success of the company. The study investigated the relationship between the aggressive/conservative working capital policies of Lupin Ltd. We found a positive relationship between the profitability measures of the company and degree of conservativeness of working capital investment and financing policies. The company yields a positive return if it follows a conservative working capital policy i.e. with more short-term funds.

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