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A Comparative Study of Working Capital Management of Infosys and Tata Consultancy Services Ltd.

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ABSTRACT

Working capital management is very important element to measure the short term solvency position of a firm and for profitability. Without its proper management, no corporate can run their business smoothly. The purpose of this study is to investigate the impact of working capital management on liquidity, profitability and element of risk on the Infosys and TCS Company. To achieve these objectives, data has been collected from secondary sources and for getting results various kind of statistical tools are used like ratio, average, Spearman's coefficient of correlation etc. The results reveal that there is a positive correlation between liquidity, profitability and risk. This study will help to both companies in management of their working capital and improving short term solvency position of the companies.

KEYWORDS : Working capital, Liquidity, Profitability and Risk.

Introduction

Management of working is essential for long term survival for every type of business. Management of working capital lies in maintaining its liquidity in day-to-day operation to ensure smooth running of the business and meets its obligations. The elements of the working capital are short term in nature such as cash, marketable securities, debtors, inventories, creditors etc. Current assets are short-lived investments that are continually being converted into other asset types. As far as current liabilities are concerned, the firms are accountable for paying these obligations on a timely basis but within a year. It should be neither excess nor inadequate in a firm.

The requirement of the working capital depends on the operating cycle of the firm. The operating cycle starts with the purchase of raw material and other sources and end with the realization of cash from the sale of finished goods. Requirement of working capital depends upon the length of operation cycle. If period of cycle is long more working capital will be required and vice versa.

Liquidity is the function of current assets and current liability. Liquidity can be achieved through to manage the tradeoff between the liquidity and profitability which helps in reduces the risk. Risk refers to the inability of the firm to meet its obligations. Large investment in current assets will increase liquidity with less dependence on short term borrowings. It will reduce the risk of the firm and also decrease the opportunity for gain or loss. On the other hand less investment in current assets increase dependence on short term borrowing, increase risk, reduce liquidity and increase profitability. So, there is an inverse relationship between degree of risk and profitability.

Review of Literature

Many previous research studies have indicated the relations between working capital management, liquidity, profitability, risk and many more factors of a company in different environments. **Refuse (1996)** studied that suppliers were not interested in interest, rather they wanted their money. His more suggestions was that improvement of working capital by delaying payment to creditors was an inefficient and ultimately damaging practice, both to its practitioners and to the economy as a whole. He suggested that those seeking concentrated working capital reduction strategies should focus on stock reduction. **Eljelly (2004)** analyzed that liquidity management involves planning and controlling of current assets and current liabilities so that it can eliminate the risk of inability to meet short-term obligations and avoids much investment in these assets. Current ratio, regression analysis and correlation have been used to measure the result. The study found that the cash conversion cycle was of more importance as a measure of liquidity than the current ratio that affects profitability. The size variable was found to have significant effect on profitability at the industry level. It was clear that there was a negative relationship between profitability and liquidity indicators such as current ratio and cash gap in the Saudi sample examined. **Padachi (2006)** analyzed that management practices are expected to assist managers in identifying areas where they might improve the financial performance of their operation. The results provided owner-managers with information regarding the basic financial management practices used by their peers and their peers attitudes toward these practices. The working capital needs of an organization change over times as does its internal cash generation rate.

Raheman and Naser (2007) examined the working capital management and profitability position of Pakistani firms.. A sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of 6 years from 1999 – 2004. The results indicated that there is a negative relationship between variables of working capital management and profitability. **Solano et. al (2007)** reviewed the effect of working capital management on SME profitability. To achieve the objective 8872 small to medium sized companies have been taken for the period over 1996-2002. Panel data methodology has been adopted and found that if cash conversion cycle will small it will help in improve the firm profitability. So, the managers of the firm should try to reduce their inventories and the number of days for which their accounts are outstanding. **Ramudu and Rao (2008)** examined the various studied done on working capital management and its components. The studies related to working capital management as a whole would necessarily discuss the individual components of working capital and hence exclusive studies on individual components of current assets and current liabilities were found to be very few. A deeper look into survey indicated that there were only a few studies available abroad and plentiful of studies in India. The survey also revealed that, though a few case studies on individual components automobile companies were available, no attempt was made in India to study the working capital management in any specific industry. ***Dănulețiu(2010)***. Study the relation between the efficiency of the working capital management and profitability using Pearson correlation analyses and take a sample of 20 annual financial statements of companies covering period 2004-2008. The conclusion of the study is that there is a negative linear correlation between working capital management indicators and profitability rates.

Dong and Su (2010) examined the relationship between profitability, cash conversion cycle and its components for listed firms in Vietnam Stock market. The results showed that there was a strong negative relationship between profitability and the cash conversion cycle. The time period was short in compare with some of the previous studies about the relationship between Working Capital Management and profitability (Deloof 2003, Shin and Sonen 1998). **Bhunia and Khan (2011**) analyzed the liquidity management efficiency of Indian steel company. Data has been taken from 230 steel companies from CMIE database, over the period of 2002 to 2010. It was concluded that liquidity and profitable position is good and satisfactory of the company. **Patel and Parjapati(2012)** analyzed five steel companies to know the comparative position and uses of working capital. Various analyses such as ratio analysis and operating cycle analysis has been used. The study reveals that Tata steel ltd has highest growth of net working capital during

holding period followed by Jindal steel ltd & it is negative with JSW steel. . Net operating cycle of Jindal steel and Tata steel is negative in each year that shows there is a very good working capital management in these companies.

Objective of the study

The objectives of this study are to examine the working capital management efficiency of Tata Consultancy Services Ltd. and Infosys and in particular to:

1. To measure the liquidity and profitability position of the company
2. To measure the relationship between liquidity, profitability and risk factor of the company

Research Methodology

Secondary data has been used to collect the data. Two hypotheses are constructed to measure the results. For this analysis, ten years based financial results of TCS and Infosys Company are used. Various statistical techniques like ratio analysis, the Spearman's rank coefficient of correlation and t test is used for testing the hypotheses.

Hypotheses

1. Null Hypothesis (H0) = There is no relationship between liquidity and profitability of the company.
2. Null Hypothesis (H0) = There is no relationship between profitability and risk factor of the company.

Analysis and Interpretation

Current ratio and working capital indicates the short term solvency position of the company. Ideal current ratio is 2:1.A higher value of current ratio shows the sound solvency position of the company. It implies company can easily pay their short term obligations but it always not good for a company to maintain higher value of CR as it implies money is blocked into stock.

Table 1 presents the current assets, current liabilities, current ratios and working capital of both the companies. The results show that there is highly fluctuation in the current ratios of both the companies. However, it can be apparent from the results that current ratios of Infosys is much better than TCS and also reveals that current ratio of Infosys is good in all years except in 2003-04 while the current ratio of TCS is not ideal in 2003-04, 2004-05, 2008-09 & 2009-10. Succinctly, it can be deduced from the results that Infosys has a sound liquidity position in comparison to TCS as presented by greater value of current ratio in all years.

Table 2 reveals the profitability position of both the companies. Return on capital employed of Infosys is high in initial years and lower in later years. The results present that there is a consistency in the value of ROCE of Infosys as compare to value of ROCE of TCS in different years as in 2002-2003, the value of ROCE is 40.49 and became 38.92 in 2011-2012 while in case of TCS, it was 69.65 (2002-2003) and became 53.11 (2011-2012). Furthermore, the results depict that in case of Infosys, larger value of ROCE in 2002-03 & 2003-04 and lowest value in 2010-11. TCS has also the highest value of ROCE in initial year which is 69.65 in 2002-03. Additionally, the average value of ROCE of TCS (46.64) is better than the value of ROCE of Infosys (38.93) which presents good profitability position of TCS.

$$r = 1-\frac{6\sum d^{2}+(m^{3}-m)/12}{N(N^{2}-1)}$$

r= Coefficient of correlation

d^2 = Difference of squares of rank

N = Number of pair of observations

m = Number of items of equal ranks

Table 3 shows the relationship between profitability and liquidity. Similar to table 1 and table2, liquidity is determined by CR and profitability is measured by ROCE. The Spearman's rank coefficient of correlation and t test is used to measure the relationship between these two aspects and measure the significant difference in their respective means.

The value of Spearman's rank coefficient of correlation of Infosys is 0.78, which present significant difference at 5% level of significant and reject our null hypothesis. It implies that there is a relationship between liquidity and profitability of the company. However, the value of Spearman's rank coefficient of correlation of TCS is 0.62 which is insignificant at 5% level of confidence. Thus we will reject our null hypothesis that there is no relationship between liquidity and profitability.

Table 4 indicates the relationship between profitability and Risk. The same ROCE is considered as an indicator of measuring profitability and risk is measured by a specific formula which is used by Anusha Agarwal (2011) in her study.

$$R_k = (E_j+L) - A_j / C_j$$

Where,

R_k = Risk Factor

E_j = Equity + Reserve & Surplus

L = long term loans

A_j = Fixed Assets

C_j = current assets

The result of Spearman's coefficient of correlation of TCS shows the significance difference between profitability and risk at 5% level of significance Thus we reject our hypothesis that there is no relationship between profitability and risk. On the other hand the Spearman's coefficient of correlation of Infosys shows insignificance difference between profitability and risk and shows positive relationship between profitability and risk.

Summary

The major objective of this study is to analyze the efficiency of working capital management of Infosys and TCS. The results disclose that the average value of current ratio of Infosys is much better than TCS but the value of return on investment is less as compare to TCS. However, the return on capital employed of TCS is better than Infosys which is 46.46%. Thus, profitability position of TCS is good rather than Infosys. The study shows that there is a positive relationship between risk & profitability and liquidity & profitability of TCS but Infosys shows negative relationship between liquidity & profitability. So, Infosys should make some vigilant planning to reduce their current ratio and improve their return on investment. This study will help the managers to make vigilant planning to manage the working capital.

Table-1 Liquidity Position of Infosys and TCS

Infosys					TCS				
Year	CA	CL	CR	WC(CA-CL)	Year	CA	CL	CR	WC(CA-CL)
2002-2003	2,757.96	703.23	3.92	2054.73	2002-2003	1,740.10	553.9	3.14	1,186.20
2003-2004	3,139.27	1883.52	1.67	1255.75	2003-2004	12.27	228.2	0.05	-215.93
2004-2005	3764.65	1346.04	2.80	2418.61	2004-2005	2,319.94	1311.01	1.77	1,008.93
2005-2006	6,105.00	2,217.00	2.75	3888.00	2005-2006	4,011.31	1779.78	2.25	2,231.53
2006-2007	9,040.00	1,824.00	4.96	7216.00	2006-2007	5,294.74	2655.51	1.99	2,639.23

2007-2008	12,326.00	3,731.00	3.30	8595.00	2007-2008	7,396.46	3713	1.99	3,683.46
2008-2009	15,732.00	3,342.00	4.71	12390.00	2008-2009	9,250.79	5054.41	1.83	4,196.38
2009-2010	17,242.00	4,030.00	4.28	13212.00	2009-2010	10,837.08	7279.35	1.49	3,557.73
2010-2011	23,150.00	4,529.00	5.11	18621.00	2010-2011	15,480.07	6422.5	2.41	9,057.57
2011-2012	29,594.00	6,328.00	4.68	23266.00	2011-2012	22,779.92	9305.95	2.45	13,473.97

CA = Current Assets, CR = Current Ratio, WC = Working Capital, CL = Current Liabilities

Table –2 Profitability Position of Infosys and TCS

Infosys **TCS**

year	CE	EBIT	ROCE= EBIT/CE	Year	CE	EBIT	ROCE= EBIT/CE
2002-03	2,860.65	1158.18	40.49	2002-2003	1,964.50	1368.2	69.65
2003-04	3,253.43	1471.71	45.24	2003-2004	422.08	16.87	4.00
2004-05	5241.73	2226.18	42.47	2004-2005	3,441.79	2122.58	61.67
2005-06	6,897.00	2,725.00	39.51	2005-2006	5,644.83	3078.84	54.54
2006-07	11,162.00	4,131.00	37.01	2006-2007	8,109.73	4174.11	51.47
2007-08	13,490.00	5,101.00	37.81	2007-2008	11,023.06	5007.28	45.43
2008-09	17,809.00	6,715.00	37.71	2008-2009	13,486.62	5147.13	38.16
2009-10	22,036.00	7,522.00	34.14	2009-2010	15,152.36	6379.92	42.11
2010-11	24,501.00	8,822.00	36.01	2010-2011	19,620.61	8720.44	44.45
2011-12	29,757.00	11,582.00	38.92	2011-2012	24,952.86	13253.24	53.11

CE = Capital Employed, EBIT = Earnings before Interest and Tax and ROCE = Return on capital employed

Table –3 Relationship between Liquidity and Profitability

Infosys

Year	CR	R1	EBIT/ROCE	R2	D(R2-R1)	DSQUARE	Spearman Rank Correlation(r)
2002-03	3.92	6	40.49	3	-3.00	9	0.78*
2003-04	1.67	10	45.24	1	-9.00	81	
2004-05	2.80	8	42.47	2	-6.00	36	
2005-06	2.75	9	39.51	4	-5.00	25	
2006-07	4.96	2	37.01	8	6.00	36	
2007-08	3.30	7	37.81	6	-1.00	1	
2008-09	4.71	3	37.71	7	4.00	16	
2009-10	4.28	5	34.14	10	5.00	25	
2010-11	5.11	1	36.01	9	8.00	64	
2011-12	4.68	4	38.92	5	1.00	1	

*Correlation is significant at the 0.05 level.

TCS

Year	CR	R1	EBIT/ROCE	R2	D(R2-R1)	DSQUARE	Spearman Rank Correlation(r)
2002-2003	3.14	1	69.65	1	0	0	.62
2003-2004	0.05	10	4.00	10	0	0	
2004-2005	1.77	8	61.67	2	-6	36	
2005-2006	2.25	4	54.54	3	-1	1	
2006-2007	1.99	5.5	51.47	5	-0.5	0.25	
2007-2008	1.99	5.5	45.43	6	0.5	0.25	
2008-2009	1.83	7	38.16	9	2	4	
2009-2010	1.49	9	42.11	8	-1	1	
2010-2011	2.41	3	44.45	7	4	16	
2011-2012	2.45	2	53.11	4	-2	4	

CR = Current Ratio, ROCE = Return on Capital Employed

Table –4 Relationship between Profitability and Risk
Infosys

Year	CE ($E_{j+L)}$	FA ($A_{j)}$	CA ($C_{J)}$	RK(CE-FA)/CA	R1	EBIT/CE	R2	R2-R1	D^2	Spearmen Rank Correlation
2002-03	2,860.65	772.72	2,757.96	0.76	2	40.49	3	1	1	0.62
2003-04	3,253.43	970.3	3,139.27	0.73	1	45.24	1	0	0	
2004-05	5241.73	1494.42	3764.65	1.00	9	42.47	2	-7	49	
2005-06	6,897.00	2133	6,105.00	0.78	3.5	39.51	4	0.5	0.25	
2006-07	11,162.00	3107	9,040.00	0.89	8	37.01	8	0	0	
2007-08	13,490.00	3931	12,326.00	0.78	3.5	37.81	6	2.5	6.25	
2008-09	17,809.00	4414	15,732.00	0.85	6	37.71	7	1	1	
2009-10	22,036.00	4188	17,242.00	1.04	10	34.14	10	0	0	
2010-11	24,501.00	4555	23,150.00	0.86	7	36.01	9	2	4	
2011-12	29,757.00	5082	29,594.00	0.83	5	38.92	5	0	0	

TCS

Year	CE ($E_{j+L)}$	FA ($A_{j)}$	CA ($C_{J)}$	RK(CE-FA)/CA	R1	EBIT/CE	R2	R2-R1	D^2	Spearmen Rank Correlation
2002-2003	1,964.50	364.3	1,740.10	0.92	2	69.65	1	-1	1	0.63*
2003-2004	422.08	225.55	12.27	16.02	10	4.00	10	0	0	
2004-2005	3,441.79	1028.44	2,319.94	1.04	4	61.67	2	-2	4	
2005-2006	5,644.83	1449.78	4,011.31	1.05	5	54.54	3	-2	4	
2006-2007	8,109.73	2218.46	5,294.74	1.11	8.5	51.47	5	-3.5	12.25	
2007-2008	11,023.06	2830.27	7,396.46	1.11	8.5	45.43	6	-2.5	6.25	
2008-2009	13,486.62	3354.21	9,250.79	1.10	7	38.16	9	2	4	
2009-2010	15,152.36	3701.24	10,837.08	1.06	6	42.11	8	2	4	
2010-2011	19,620.61	4767.55	15,480.07	0.96	3	44.45	7	4	16	
2011-2012	24,952.86	5790.5	22,779.92	0.84	1	53.11	4	3	9	

*Correlation is significant at the 0.05 level.

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