“RELATIONSHIP BETWEEN CASH CONVERSION CYCLE & PRICE TO EARNING RATIO OF INDIAN IT, FMCG & AUTOMOBILE INDUSTRY”

HARSH HARNATHKA

MBA,

School of Commerce and Management

ARKA Jain University, Jharkhand, India

ABSTRACT

The cash conversion cycle (CCC) is a metric that expresses the length of time (in days) that it takes for a company to convert its investments in inventory and other resources into cash flows from sales. The price-to-earnings ratio (P/E ratio) is the ratio for valuing a company that measures its current share price relative to its earnings per share (EPS). The price-to-earnings ratio is also sometimes known as the price multiple or the earnings multiple.

Simply put, a P/E ratio of 15 would mean that the current market value of the company is equal to 15 times its annual earnings. Put literally, if you were to hypothetically buy 100% of the company's shares, it would take 15 years for you to earn back your initial investment through the company's ongoing profits.

In the study attempt has been put towards finding a relationship between CCC and PE ratio over 3 major sectors by market capitalization in India. This study will help in understanding the effect of CCC over PE ratio and aid management in knowing where to appropriate the focus to improve the performance of organizations.

Keywords: Cash conversion cycle (CCC), PE ratio, Correlation, Automobile, IT, FMCG

CHAPTER 1- INTRODUCTION

The CASH CONVERSION CYCLE (CCC) is the number of days that pass between a company's actual cash outflows for needed productive resources and actual cash inflows from product sales. The shorter cash conversion cycle, stated in a number of days, indicates better liquidity and working capital position of a company. Quick cash recovery is a permanent business consideration, especially in the short term and in smaller organizations

In management accounting, the Cash conversion cycle (CCC) measures how long a firm will be deprived of cash if it increases its investment in inventory in order to expand customer sales. It is thus a measure of the liquidity risk entailed by growth. However, shortening the CCC creates its own risks: while a firm could even achieve a negative CCC by collecting from customers before paying suppliers, a policy of strict collections and lax payments is not always sustainable.

CCC = days between disbursing cash and collecting cash in connection with undertaking a discrete unit of operations.

= Days Inventory Outstanding (DIO) + Days Sales Outstanding (DSO) - Days Payable Outstanding (DPO)

= [Avg. Inventory/ (COGS/period)] + [Account Receivable/ Total Credit Sales* Number of Days] + [Account payable/COGS* Number of Days]

Liquidity refers to a company's capacity to raise money when it's needed. The liquidity status of a corporation is determined by two key factors. The first is its ability to turn assets into cash in order to meet its existing obligations (short-term liquidity). The second factor is the company's debt capacity. The Cash Conversion Cycle is one approach of determining liquidity (CCC). CCC is an analysis of the time between a firm's cash collection and disbursement, calculated as Days to inflows – Days to outflows.

PE RATIO The price-earnings ratio, also known as P/E ratio, P/E, or PER, is the ratio of a company's share (stock) price to the company's earnings per share. The ratio is used for valuing companies and to find out whether they are overvalued or undervalued. It can be thought of as the amount of time the company would have to maintain present earnings in order to make enough money to pay off the existing share price.

When compared to a firm with a higher PE ratio, a company with a low ratio suggests that the market regards it as having higher risk, weaker growth, or both. The PE ratio of a publicly traded firm's stock reflects the market's collective opinion of how risky the company is and how its profits growth prospects compare to those of other companies.

This can influence business decisions in several ways: If a company wants to acquire companies with a higher P/E ratio than its own, it usually prefers paying in cash or debt rather than in stock. Though in theory the method of payment makes no difference to value, doing it this way offsets or avoids earnings dilution.

Conversely, Companies with greater P/E ratios than their aims, on the other hand, are more likely to use their shares to fund acquisitions. Companies with high P/E ratios but erratic earnings may be tempted to construct conglomerates in order to smooth earnings and diversify risk. Companies with low P/E ratios, on the other hand, may be enticed to buy small, high-growth businesses in order to "rebrand" their portfolio of operations and burnish their image as growth stocks in order to raise their PE rating.

Because the price is measured in dollars and earnings are calculated in dollars per year, the ratio is strictly measured in years. As a result, the ratio shows how many years it will take to cover the cost assuming profits remain constant.

Profitability refers to how much a company's overall income surpasses its entire expenses during a certain time period. Profitability is a concept in accounting that is sometimes known as net profit or net income. Profitability ratios are a group of financial indicators that are used to evaluate a company's ability to create earnings over time in relation to its revenue, operational costs, balance sheet assets, or shareholders' equity, utilizing data from a certain point in time. The P/E ratio aids investors in determining a stock's market value in relation to its earnings. In a nutshell, the P/E ratio indicates how much the market is ready to pay for a stock now based on its previous or projected earnings.

2- REVIEW OF LITERATURE

Moss, J. D., and Stine, B. investigated the relationship between the length of the cash conversion cycle and the size of retail enterprises in their (1993) study "Cash Conversion Cycle and Firm Size: A Study of Retail Firms". Larger retail enterprises had shorter cash conversion periods, according to the findings. Small retail businesses are most likely to increase their CCC by implementing measures that shorten inventory or receivables conversion times, or both. He also discovered that the length of the cash conversion cycle is inversely proportional to the firm's cash flows.

Kartikey Koti in his (2013) research on “Fundamental Equity Valuation A Case Study of Tcs, Infosys, And Wipro Companies” found out that Liquidity position of Infosys company (ratio is 4.7%) is very much favorable when compared with Wipro and TCS. And Infosys’s EPS and P/E indicate competitive advantage over the peers.

Ashok Panigrahi (January 2013) in his research work on "Conversion Cycle and Firms' Profitability – A Study of Cement Manufacturing Companies of India" where his Study takes into consideration top Five Indian cement companies for a period of 10 years starting from 2001 to 2010. It was found that the Selected companies are having low average return on asset and return on equity with significantly negative cash Conversion cycle. Regression results showed that cash conversion cycle is having significantly positive association with both return on assets and equity showing that it is not necessary that there must be lesser the cash conversion cycle greater Would be the profitability measured through return on assets and equity.

Slobodan Stojanović (2014) in his research work "Cash Conversion Cycle as A Company Liquidity Measure" where he worked on understanding cash conversion cycle concept and its importance in relation to the measurement of the liquidity position of a company. It clearly indicates where additional effort is needed regarding the management of CCC specific components. Shorter CCC can be realized by Simultaneously decreasing the inventory and receivables conversion periods, while Increasing payables deferral period. The application and calculation of liquidity Measures for ten firms that make CROBEX10 stock index on the ZSE, evidently Showed a deterioration of their liquidity position during the analyzed period from 2010 to 2012. The values of net working capital and current ratio correspond to Cash conversion cycle values; those measures aid in understanding the liquidity Positions of analyzed firms.

Singh P. in her (2014) research on "A Study on Inventory Management with Reference to Leading Automobile Industry" where the study was made on Ashok Leyland where it was found that CCC showed continuous constant rise with time from 2009 to 2013.

Das S. in his paper (2015) "Impact of cash conversion cycle on cash holding – A study on FMCG sector" analyzed on relationship Between Cash Conversion Cycle and Cash Holding and found that on the basis of CCC, HUL is exceptional and it followed by Nestle, Britannia, Dabur etc. From the Correlation point of view, HUL and Marico registered a negative association between CCC and ITR. On the other hand, Britannia and Marico registered a negative relationship between CCC and DTR. From average cash holding point of view HUL is best but in case of Marico the average cash holding Is poorer. Lower CCC may be the reason for holding excess cash of HUL. We all know that holding Excess cash signifies lower

profitability. In case of Marico, it is observed that may be due to higher CCC The company maintained lower level of cash.

Tilley, Jordan R. in (2015) found out in his research work "Investment Performance of Common Stock in Relation to their Price-Earnings Ratios: BASU 1977 Extended Analysis" that investing in a portfolio which comprised of the lowest PE ratio assets yields the highest returns over the period taken in examined period. But, with low hedge alpha values, stock with prices above $35 show the PE strategy would be ineffective.

Joji Abey and Velmurugan in their (2018) research on "Determinants of Profitability in Indian Automobile Industry" came on a conclusion that there exists a relationship between age, expenses to income ratio and assets turnover ratio on profitability. Analysis discloses that leverage, size of the company, growth in Sales, asset turnover ratio, index of industrial and production are the factors that Determine profitability of automobile companies. They also recommended automobile companies have to utilize their fixed assets at optimal level, fixed assets like machinery should not be kept idle.

Javed Iqbal, Alia Manzoor, Quratulain Akhtar, Shaheera Amin (March 2020) in their paper "Effect of Cash Conversion Cycle on Profitability of the firm: A Study of Oil & Gas and Engineering Sector of Pakistan" researched on cash cycle and ROA and found that there is a highly Negative significant association among CCC and firm's profitability as ROA. They found that lesser the no. of days of CCC, the firm has Greater profitability. Their analysis showed the enterprises can get greater profitability by lowering the time period of CCC through decreasing the collection period of receivables, decreasing the selling period of inventory and lengthening the period of credit payment.

3- RESEARCH METHODOLOGY

3.1 SELECTION OF DATA

For the purpose of study 3 industries will be taken randomly from the top 5 industries in India by Market Cap listed under Bombay Stock Exchange in the year 2021

From each industry 3 companies are taken for analysis which were either the leader in the industry by market capitalization or were market leader in different segments of the industry.

For the FMCG industry HUL, ITC & NESTLE are taken for analysis. For the IT industry TCS, WIPRO & INFOSYS are taken for analysis and for AUTOMOBILE industry HERO MOTOCORP, TATA MOTORS & MARUTI SUZUKI are taken for analysis.

Data used are of a period span of 4 years from year ended 2018 to year ended 2021.

3.2 SOURCES OF DATA

Secondary data will be collected from sources like money control, yahoo finance, screener, fin box and companies' statutory reports.

3.3 TOOLS USED

Correlation, Median and Sector Average were used to make an analysis

3.4 OBJECTIVE OF THE STUDY

To find out the presence of relationship between cash conversion cycle and price to earnings ratio in FMCG sector

To find out the presence of relationship between cash conversion cycle and price to earnings ratio in IT sector

To find out the presence of relationship between cash conversion cycle and price to earnings ratio in AUTOMOBILE sector

4- DISCUSSION & ANALYSIS

Cash Conversion Cycle (CCC) & Price to Earnings Ratio (PE RATIO) of the following companies are extracted from IT sector, FMCG sector and Automobile sector.

TCS, INFOSYS & WIPRO from IT sector; HUL, ITC & NESTLE from FMCG sector; and HERO MOTOCORP., MARUTI SUZUKI & TATA MOTORS from AUTOMOBILE sector.

Different sectors and different companies have different CCC and PE ratio due to various factors and external & internal influences. Getting to understand the relationship between these factors will aid in understanding and better performing of management as it will show the relation of the factors and if one factor can be controlled then it would help massively in controlling the other factor. The value of CCC is in days whereas value of PE ratio is in term of Years.

To meet the objective of the dissertation Correlation is calculated to understand the relationship between the Cash Conversion Cycle and PE ratio along with Correlation of sector average.

Following tables show the sector wise relationship between CCC and PE ratio of their three major industrial players. In table 1 Analysis of TCS, INFOSYS & WIPRO from IT sector are shown. In table 2 Analysis of HUL, ITC & NESTLE from FMCG sector are shown and in table 3 Analysis of HERO MOTOCORP., MARUTI SUZUKI & TATA MOTORS from AUTOMOBILE sector are shown.

SECTOR WISE- CASH CONVERSION CYCLE & PRICE TO EARNING ANALYSIS TABLES

TABLE 1: ANALYSIS OF IT SECTOR

INDUSTRIES	CASH CONVERSION CYCLE				PRICE TO EARNINGS				CO RELATION	INTERPRETATION
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-18	Mar-19	Mar-20	Mar-21		
IT SECTOR										
TCS	61	70	67	62	21.2	24.1	21.2	36.6	-0.339085629	WEAK NEGATIVE CO-RELATION
INFOSYS	68	65	74	70	15.4	21.2	15.5	31.6	-0.13943057	WEAK NEGATIVE CO-RELATION
WIPRO	68	62	62	56	15	18.4	11.3	22.3	-0.633992109	MODERATE NEGATIVE CO-RELATION
SECTOR MEDIAN	68	65	67	62	15.4	21.2	15.5	31.6	-0.983519982	STRONG NEGATIVE CO- RELATION
SECTOR AVERAGE	65.667	65.667	67.667	62.667	17.2	21.233	16	30.1667	-0.941501985	STRONG NEGATIVE CO- RELATION

In table 1 showing relationship between cash conversion cycle and price to earnings of 3 major companies in IT sector which are TCS, INFOSYS & WIPRO, it can be seen that in TCS there is a -0.33 Correlation between the factors. And it can be seen that in INFOSYS there is a -0.13 Correlation between the factors. Whereas it can be seen that in WIPRO there is a -0.63 Correlation between the factors. Sector median showing a Correlation of -0.98 and sector average with a -0.94 Correlation.

TABLE 2: ANALYSIS OF FMCG SECTOR

INDUSTRIES	CASH CONVERSION CYCLE				PRICE TO EARNINGS				CO RELATION	INTERPRETATION
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-18	Mar-19	Mar-20	Mar-21		
FMCG SECTOR										
HUL	-103	-89	-98	-81	55.34	60.93	73.56	71.45	0.453411591	MODERATE POSITIVE CO-RELATION
NESTLE	-22	-14	-3	-7	51.9	51.8	59	54.9	0.873654326	STRONG POSITIVE CO RELATION
ITC	115	122	129	129	27.71	28.88	13.81	20.43	-0.803308772	STRONG NEGATIVE CO RELATION
SECTOR MEDIAN	-22	-14	-3	-7	51.9	51.8	59	54.9	0.873654326	STRONG POSITIVE CO RELATION
SECTOR AVERAGE	-3.333	6.3333	9.3333	13.667	44.983	47.203	48.79	48.9267	0.973110505	STRONG POSITIVE CO RELATION

In table 2 showing relationship between cash conversion cycle and price to earnings of 3 major companies in FMCG sector which are HUL, NESTLE & ITC, it can be seen that in HUL there is a 0.45 Correlation between the factors. And it can be seen that in NESTLE there is a 0.87 Correlation between the factors. Whereas it can be seen that in ITC there is a -0.80 Correlation between the factors. Sector median showing a Correlation of 0.87 and sector average with a 0.97 Correlation.

TABLE 3: ANALYSIS OF AUTOMOBILE SECTOR

INDUSTRIES	CASH CONVERSION CYCLE				PRICE TO EARNINGS				CO RELATION	INTERPRETATION
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-18	Mar-19	Mar-20	Mar-21		
AUTOMOBILE SECTOR										
HERO MOTOCORP	-29.74	-18.74	-18.07	-30.01	19.03	14.82	8.75	19.96	-0.891705565	STRONG NEGATIVE CO RELATION
TATA MOTORS	-34	-32	-42	-55	10.6	-2	-22.2	-6.8	0.421001239	MODERATE POSITIVE CO-RELATION
MARUTI SUZUKI	-42	-29	-20	-44	33.97	26.34	22.81	47.2	-0.886378397	STRONG NEGATIVE CO RELATION
SECTOR MEDIAN	-34	-29	-20	-44	19.03	14.82	8.75	19.96	-0.936822124	STRONG NEGATIVE CO RELATION
SECTOR AVERAGE	-35.25	-26.58	-26.69	-43.003	21.2	13.053	3.12	20.12	-0.774135699	STRONG NEGATIVE CO RELATION

In table 3 showing relationship between cash conversion cycle and price to earnings of 3 major companies in AUTOMOBILE sector which are HERO MOTOCORP, TATA MOTORS & MARUTI SUZUKI, it can be seen that in HERO MOTOCORP there is a -0.89 Correlation between the factors. And it can be seen that in TATA MOTORS there is a 0.42 Correlation between the factors. Whereas it can be seen that in MARUTI SUZUKI there is a -0.88 Correlation between the factors. Sector median showing a Correlation of -0.93 and sector average with a -0.77 Correlation.

FINDINGS AND RECOMMENDATION

The correlation coefficient is a statistical measure of the strength of the relationship between the relative movements of two variables. The values range between -1.0 and 1.0. being -1 strong Negative Correlation, 0 meaning No relation and 1 being strong Positive relation.

FINDINGS:

In IT sector CCC and PE ratio of TCS and INFOSYS is found to have weak negative Correlation. WIPRO is found to have Moderate Negative Correlation.

In FMCG sector CCC and PE ratio of HUL is found to have Moderate Positive Correlation, NESTLE to have strong Positive Correlation whereas ITC to have Strong Negative Correlation

In AUTOMOBILE sector CCC and PE ratio of HERO MOTOCORP. And MARUTI SUZUKI Is found to have Strong Negative Correlation whereas TATA MOTORS to have Moderate Positive Correlation.

It also shows the sector average and their Correlation where IT & AUTOMOBILE sectors are found to have Strong Negative Correlation and FMCG sector is found to have Strong Positive Correlation.

RECOMMENDATION:

Liquidity and profitability of an organization go hand in hand, by measuring relationship between the CCC and PE ratio, a better understanding of how to control the profitability by controlling liquidity can be a focus for the management of corporations.

CCC in an organization must be near to the ideal industry standards and management must focus in same for optimum growth and profitability.

CONCLUSION

The study between the two factors Cash Conversion Cycle & Price to Earning ratio of three major sectors in India, which are IT, FMCG and AUTOMOBILE industries where 3 company were taken in study from each sector for the period 2018 to 2021 (4 years).

The study reveals that:

IT & AUTOMOBILE sectors are found to have Strong Negative Correlation and FMCG sector is found to have Strong Positive Correlation when analyzed by overall sector average, which

shows that the factors are greatly related to each other and perhaps the concerned may use the former to control and influence the latter for achieving the desired performance results in an organization

References:

Moss, J. D., & Stine, B. (1993). Cash Conversion Cycle and Firm Size: A Study Of Retail Firms. Managerial Finance, 19(8), 25–34. https://doi.org/10.1108/EB013739

Kartikey Koti (2013) "Fundamental Equity Valuation A Case Study Of TCS, INFOSYS, AND WIPRO Companies"/ International Journal Management Research & Business Strategy 2013 ISSN 2319-345X www.ijmrbs.com/Vol. 2, No. 3, July 2013 © 2013 IJMRBS

Ashok Panigrahi (January 2013) "Conversion Cycle and Firms' Profitability – A Study of Cement Manufacturing Companies of India"
https://www.researchgate.net/publication/323394056

Slobodan Stojanović (2014) "Cash Conversion Cycle As A Company Liquidity Measure"/ ISSN 1847-0408/ISBN 978-953-253-126-8/Indexed in: EBSCOhost, RePEc, EconPapers, Socionet

Tilley, Jordan R. in (2015) "Investment Performance of Common Stock in Relation to their Price-Earnings Ratios: BASU 1977 Extended Analysis"/https://digitalcommons.usu.edu/gradreports/646

Somnath Das (2015) "Impact of cash conversion cycle on cash holding – A study on FMCG sector"/ © 2015 Growing Science Ltd. All rights reserved/ Doi: 10.5267/j.ac.2015.11.002

Joji Abey and Velmurugan (2018) research on "Determinants of Profitability in Indian Automobile Industry"/ International Journal of Pure and Applied Mathematics/Volume 119 No. 12 2018, 15301-15313/ISSN: 1314-3395 (on-line version)/url: http://www.ijpam.eu

Singh P. "A Study On Inventory Management With Reference To Leading Automobile Industry"/BEST: International Journal of Management, Information Technology and Engineering (BEST: IJMITE) /ISSN 2348-0513/ Vol. 2, Issue 5, May 2014, 15-28 © BEST Journals

Javed Iqbal, Alia Manzoor, Quratulain Akhtar , Shaheera Amin (March 2020) “Effect of Cash Conversion Cycle on Profitability of the firm: A Study of Oil & Gas And Engineering Sector of Pakistan”