

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

Abstract

The cash conversion cycle (CCC) is a measure of the duration (in days) it takes a business to convert investments in inventory and other resources into cash flow from sales. The price-to-earnings ratio (P/E ratio) is a company's valuation ratio that measures the current share price compared to earnings per share (EPS). The price/earnings ratio is also sometimes called the price multiple or the earnings multiple.

Simply put, a P/E ratio of 25 means the organization is currently worth 25 times its annual earnings. In other words, if you buy 100% of the company's shares, it will take 25 years for your initial investment to be recouped from the company's ongoing profits.

In this 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.

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I. INTRODUCTION

- 1. The Cash Conversion Cycle (CCC)** is the number of days that elapse between a company's actual cash flow for necessary production resources and its actual cash flow from product sales.

A shorter cash conversion cycle, expressed in days indicates better operating and working capital of the company. Quick cash collection is a constant business problem, especially in the short term and in small organizations. In managerial accounting, the cash conversion cycle (CCC) estimates in how long a business will be short of cash if it increases investment made in inventory to increase sales to customers.

Therefore, it is used to ascertain liquidity risk due to growth.

However, contracting the CCC comes with its own risks, while a business can even get a negative CCC for collecting fees from clients and customers before paying suppliers, extreme collection policies and tax payments are not always feasible.

CCC = Number of days between disbursement and collection of cash within the framework of an operating unit

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

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

- 2. 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 is an analysis of the time between a firm's cash collection and disbursement, calculated as Days to inflows – Days to outflows.

The company's liquidity position is determined by two important factors. The first is the ability to convert assets into cash to meet current liabilities (short-term). The second is the company's ability to pay its debts. The Cash Conversion Cycle is a way of determining cash flow. CCC is a time-averaged assessment of a company's cash receipts and payments calculated on a daily basis.

Liquidity refers to a company's ability to raise capital at the time of need. The liquidity of a company is determined by two main factors. The first is the ability to convert its assets into cash to meet current obligations (short-term liquidity). The second factor is the company's ability to repay debt. Cash Conversion Cycle is a way of determining cash flow. CCC is an analysis of the time between receipt and disbursement of cash, calculated by the number of days before inflow – days before cash outflow.

- 3. PE Ratio:** The price-to-earnings ratio, also known as the P/E or PER ratio, is the ratio of a company's stock price to its earnings per share. This ratio is used to evaluate organizations and know if they are overvalued or undervalued. This can be considered as the time the company must maintain its current profitability in order to earn enough money to cover the current stock price

When compared to a firm with a higher PE ratio, a company with low ratio, suggests that the market considers 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 organization is and how its profits growth outlook compare to those of other companies.

This can affect business decisions in many ways: If a company wishes to perform acquisition of companies with a higher P/E ratio than its own, it will often prefer to pay in cash or debt rather than in stock. Although the payment method theoretically makes no difference in value, doing so in this way will offset or avoid the earnings dilution.

In contrast, companies with a higher-than-target P/E ratio are more likely to use their shares to fund acquisitions. Companies with a high price-to-earnings ratio but with irregular earnings may be tempted to form corporations to stabilize earnings and diversify risk. On the other hand, companies with low P/E ratios may be incentivized to buy small, high-growth companies to “rebrand” their business portfolio and improve their image. As growth stocks to improve PE ratings

Since prices are in rupees and sales are in rupees per year, the ratio is strictly calculated in years. Accordingly, this ratio indicates how many years it takes to cover costs assuming constant profits.

- 4. Profitability** refers to the extent to which a company's total revenue exceeds its total costs over a given period of time. Profitability is an accounting concept sometimes referred to as net profit or net profit. Profitability ratios are a group of financial ratios used to gauge a company's ability to generate profits over time relative to sales, operating expenses, balance sheet assets, or capital. Owner, using the data at any given time. The P/E ratio helps investors determine the market value of a stock relative to its earnings. In a nutshell, the P/E ratio indicates how much the market is willing to pay for a stock based on its past or expected earnings

II. 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 Infosys’ liquidity position (4.7% ratio) is very favorable compared to Wipro and TCS. And Infosys’ EPS and P/E show a competitive advantage over its 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. Selected companies were found to have low average returns on assets and equity, with a significantly negative cash conversion cycle. The regression results show that the cash conversion cycle is significantly positively associated with return on assets and equity, suggesting that the cash conversion cycle is not necessarily less. Profitability will be measured by 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 the concept of the cash conversion cycle and its relevance in relation to measuring a company’s liquidity position. It clearly points out where more effort is needed in managing specific factors of the CCC. Shorter CCC is achieved by continuously minimising inventory, and accounts receivable conversion times and maximizing the deferral period for accounts payable. The working factors of liquidity measures for the 10 companies that make up the CROBEX10 stock market index on ZSE clearly shows the decline in the liquidity positions of these companies in the analysis period from year 2010 to 2012. Net sales and overall liquidity ratio correspond to the cash conversion cycle. Value; These measures help to understand the liquidity positions of the analyzed companies

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 notably exceptional and is followed by Britannia, Nestlé, Dabur etc. When seen from a correlation perspective, HUL & Marico noted a negatively related association between CCC and ITR. In contrast, Britannia and Marico noted a negative relationship between CCC and DTR. Average cash in HUL is best, but in Marico’s case average cash is worse. Falling CCC could be the reason why HUL is holding surplus cash. We all know that holding surplus cash means being less profitable. In the case of Marico, it was found that this could be due to long CCC. The company maintains lower cash levels.

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 consisting of assets with the lowest PE ratios that will generate the highest returns over the period under consideration. However, with low hedging alpha values, stocks priced above \$35 suggest that the PE strategy will not work.

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. The analysis shows that leverage, company size, revenue growth rate, asset turnover rate, industrial and manufacturing indexes are the factors that determine the profitability of automakers. . They also recommend that automakers use their fixed assets optimally and that fixed assets such as machinery should not be left alone.

Javed Iqbal, Alia Manzoor (March 2020) in their paper “Effects of CCC on Profitability of the organization: A Study of Oil, Gas & Engineering Sector of Pakistan” researched on cash conversion cycle and ROA and found very negatively related association between CCC & ROA. They found that the fewer CCC days, the more profitable the company. Their analysis shows that companies can attain higher profitability by reducing CCC time by controlling receivables collection period, reducing stock inventory sales period & extending credit settlement period.

III. RESEARCH METHODOLOGY

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.
2. **Sources of Data:** Secondary data will be collected from sources like money control, yahoo finance, screener, fin box and companies’ statutory reports.
3. **Tools Used:** Correlation, Median and Sector Average were used to make an analysis
4. **Objective of The Study:** To find out presence & type of relationship between the cash conversion cycle and price/ earnings ratio in FMCG sector

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

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

IV. 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 achieve the aim of study, correlation was calculated to understand the relationship associated between cash conversion cycle and PE ratio as well as 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 associated between the cash conversion cycle and price to earnings of three 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 associated between the cash conversion cycle and price to earnings of three 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 associated between the cash conversion cycle and price to earnings of three 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.

V. FINDINGS AND RECOMMENDATION

The correlation coefficient is a measurable degree of the quality of relationship among relative movements of two factors. The values extend between -1.0 and 1.0. being -1 strong Negative Correlation, 0 meaning No relation and 1 being strong Positive relation.

- 1. 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.

- 2. 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.

VI. CONCLUSION

In the study between the two factors Cash Conversion Cycle & Price to Earnings 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

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