

Relationship between Liquidity and Profitability in Indian Automobile Industry

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Abstract: *For a business, accounting liquidity is a measure of their ability to pay off debts as they come due, that is, to have access to their money when they need it. In practical terms, assessing accounting liquidity means comparing liquid assets to current liabilities, or financial obligations that come due within one year. There are a number of ratios that measure accounting liquidity, which differ in how strictly they define "liquid assets." (Investopedia.com). On the other hand profitability is the ability of a company to use its resources to generate revenues in excess of its expenses. For any business the Tradeoff between the profitability and liquidity is important, thus the aim of the business is to maintain a proper level of the current funds or liquidity. That was the reason behind the current study where it is to be checked out that whether the automobiles industry is making a perfect balance between the liquidity and profitability or not. It was found that the profitability and liquidity has similar changes in most of the cases in the different companies and the correlation was found to be significant and positive between the liquidity and profitability.*

Keywords: Liquidity, Profitability, Ratio, Automobile Industry

1. Introduction of Liquidity & Profitability

Liquidity is considered in various terms in for a business. It is a measure of the extent to which a person or organization has cash to meet immediate and short-term obligations, or assets that can be quickly converted to do this. In accounting it is called as the ability of current assets to meet current liabilities. And in terms of investments it is the ability to quickly convert an investment portfolio to cash with little or no loss in value. In an organisation it describes as the degree to which an asset or security can be quickly bought or sold in the market without affecting the asset's price. Market liquidity refers to the extent to which a market, such as a country's stock market or a city's real estate market, allows assets to be bought and sold at stable prices. Cash is the most liquid asset, while real estate, fine art and collectibles are all relatively illiquid. Accounting liquidity measures the ease with which an individual or company can meet their financial obligations with the liquid assets available to them. There are several ratios that express accounting liquidity. For a business, accounting liquidity is a measure of their ability to pay off debts as they come due, that is, to have access to their money when they need it. In practical terms, assessing accounting liquidity means comparing liquid assets to current liabilities, or financial obligations that come due within one year. There are a number of ratios that measure accounting liquidity, which differ in how strictly they define "liquid assets." (Investopedia.com). On the other hand Profitability is ability of a company to use its resources to generate revenues in excess of its expenses. In other words, this is a company's capability of generating profits from its operations. It is one of four building blocks for analyzing financial statements and company performance as a whole. The other three are efficiency, solvency, and market prospects. Investors, creditors, and managers use these key concepts to analyze how well a company is doing and the future potential it could have if operations were managed properly ([http://www. myaccountingcourse.com](http://www.myaccountingcourse.com)).

For any business the Tradeoff between the profitability and liquidity is important since the liquidity increases means that the liquid assets increases while the profitability will increased when the investment in not current assets like building, plant, machinery and other fixed assets increases. But on the other hands if liquidity decreases than the ability of firm to pay for the current debts will be decreased and firm can suffer due to lack of current funds. Thus the aim of the business to maintain a proper level of the current funds or liquidity. That was the reason behind the current study where it is to be checked out that whether the automobiles industry is making a perfect balance between the liquidity and profitability or not.

Objectives

- 1) To calculate the current trends in the liquidity and profitability of the automobiles industry.
- 2) To calculate correlation between the liquidity and profitability.

2. Literature Reviews

The literature reviews on the subject can be highlighted as under:

Dharmendra S. Mistry, (2012) revealed that most of the firms contemplate profit maximisation as an indicator of growth and development of an enterprise, the concept of profitability has become significant. Profitability is considered to be the center around which rotation of all the actions of business takes place. The main objective of this study is to ascertain the determinants of profitability of Indian Automobiles Industry for a period of five years i.e. 2004-05 to 2008-09. The study found that DE, ITR and SIZE were the most important determinants of the profitability which affected the profitability of the companies under the study positively. Only LIQ was found to have negative effect on the profitability.

As the large size firms have the advantage of technical knowhow and economies in manufacturing, marketing, supervision, and in raising capital; positive relationship exists between the size of the firms and profitability (Nagarjunan and Barathwal, 1989). Profitability is also determined by the assets structure and proper utilisation of the production capacity (Chandra Sekaran, 1993). Profitability is also explained by the age of the firms, diversification, expansion of capacities and retained earnings (Agarwal, 1999). Vertical integration, leverage, liquidity, inventory turnover and operating expenses to sales ratio are also the strongest determinants of the profitability of an enterprise (Vijaya Kumar and Kadirvel, 2003). The prime objective of this study is to check determinants of profitability of the selected three passenger vehicle players and three two- wheeler players in India during the period 2004-05 to 2008-09. For the purpose of analyzing the determinants of profitability, selection of variables has been made on the basis of empirical works and existing theory. It is hypothesized for the study that independent variables (i.e. Size (Total Assets), Liquidity (Current Ratio), Inventory Turnover Ratio and Debt-Equity Ratio) are statistically significant in explaining dependent variable (Profitability i.e. Return on Capital Employed) of the players under the study.

Hassan AftabQazi, Syed Muhammad Amir Shah, Zaheer Abbas and TanzeelaNadeem(2011) The correlation between working capital and profitability of firms is analyzed for the management of cash cycle management .Working capital is made by the three important factors, debtor, creditor and stock. When we include cash conversion cycle (CCC) to working capital then it becomes working capital management (WCM). Two sectors are selected as a sample size: automobile and oil and gas sector. The time period is rom 2004-2009. Different variables affecting the profitability of firms are selected. In this study, networking capital, inventory turnover in days, average account receivable and financial asset to total assets (FATA) are taken as independent variables. The result shows positive movement of working capital (WC) on firm's profitability. R shows the fitness of the model which is 49.95%. The independent variables explain49.95% of the model.

Literature written on growth journey of Indian automobile industry has three phases. Pre-1983: It was a closed market. Growth of the market was limited by supply. Players were,

Hindustan Motors, Premier, Telco, Ashok Leyland, and Mahindra & Mahindra. Between1983-1993: It was era ofJapanisation. GOI- Suzuki entered into joint venture to form MarutiUdyog. Joint ventures were formed with companies in commercial vehicles and components. Players were, MarutiUdyog, Hindustan Motors, Premier, Telco, Ashok Leyland, and Mahindra & Mahindra. Between 1993-2012: Delicensing of sector in 1993, global major OEMs start assembly in India like Toyota, GM, Ford, Honda, Hyundai etc.

3. Methodology

Research Design: The proposed research format is based on financial relationship of the automobiles company. For this purpose mainly the secondary data was calculated by using published annual data of company, i.e., annual reports.

Data Collection Tools: This research work is in the form of empirical study for which the financial figures of the companies were collected through the company's websites, for the purpose of current study the data for the years 2010 to 2015 were collected for 10 companies, including Tata Motors, Ashok Leyland, Bajaj Auto, Eicher Motors, Force Motors, Hero Motocorp, Mahindra And Mahindra, Maruti Suzuki, Tvs, Sundaram Clayton etc.

Ratios used: The ratios used for the current study includes Current ratio, Quick ratio, Leverage ratio, Gross margin ratio, Net margin ratio, Account receivable turnover ratio, Return on assets ratio, and Return on investment ratio.

Research question: whether the ratio of all the companies has gained during the selected period of study or not? And the ratios which will defined the base for the policy of the companies positions are increased or not during the period of study or not?

Data Analysis: The top 10 automobiles companies in terms of their sales and profit includes EICHER motors, Ashok Leyland, Force Motors, Hero Motocorp, Mahindra And Mahindra, Maruti Suzuki, Sundaram - Clayton limited (SCL), Tata Motors Limited, TVS Motor Company and Bajaj Auto. The data for the various ratios were gathered from the annual reports and presented in table-1 as under:

Table 1: Data of selected companies

S. No.	Company	Year	Current ratio	Quick ratio	Gross Margin Ratio	Net Profit Margin Ratio	Leverage Ratio	Accounts Receivable Turnover Ratio	Return on Assets Ratio
1	TATA MOTORS	2014-2015	0.42	0.1	42.93	-10.24	2.36	10.48	-7.96
		2013-2014	0.36	0.08	44.77	-2.76	1.59	11.97	-2.06
		2012-2013	0.48	0.11	44.02	0.36	1.73	13.64	0.34
		2011-2012	0.62	0.21	42.21	2.29	1.8	16.85	2.47
		2010-2011	0.58	0.26	46.64	4.33	1.71	18.73	4.05
2	ASHOK LEYLAND	2014-2015	0.93	0.4	40.3	3.06	1.6	31.77	3.32
		2013-2014	0.84	0.29	44.29	-0.86	1.88	44.7	-0.71
		2012-2013	0.93	0.31	44.28	3.48	1.94	38.29	3.59
		2011-2012	0.89	0.26	34.44	4.96	1.83	32.29	5.79
		2010-2011	1.06	0.36	34.19	6.54	1.67	34.69	7.57
3	BAJAJ AUTO	2014-2015	2.13	0.29	37.52	18.56	0.46	11.89	26.25
		2013-2014	1.19	0.27	37.59	22.35	0.53	14.02	31.41

4	EICHER MOTORS	2012-2013	1.5	0.32	34.41	20.69	0.58	13.59	34.19
		2011-2012	1.12	0.45	32.19	20.31	0.83	7.78	36.32
		2010-2011	0.79	0.15	32.79	25.83	0.89	7.8	47.02
		2014-2015	1.31	0.06	44.01	24.56	0.81	1.2	35.8
		2013-2014	1.65	0.05	42.83	19.24	0.81	2.35	24.48
		2012-2013	1.99	0.03	40.59	14.81	0.63	1.93	16.97
		2011-2012	2.73	0.03	37.64	19.24	0.45	2.03	18.13
5	FORCE MOTORS	2010-2011	5.83	0.3	476.4	56.74	0.11	4.43	30.35
		2014-2015	1.67	0.7	36.9	4.79	0.5	15.2	6.34
		2013-2014	1.71	0.72	37.86	2.75	0.05	21.67	3.53
		2012-2013	1.79	0.73	35.19	0.86	0.48	17.88	1.12
		2011-2012	2.6	1.53	34.58	44.31	0.46	25.02	60.76
6	TVS	2010-2011	0.97	0.27	38.21	91.53	2.13	34.33	149.89
		2014-2015	1.35	0.23	33.84	4.21	1.8	16.99	9.91
		2013-2014	0.92	0.27	39.27	3.95	1.52	13.67	9.89
		2012-2013	0.9	0.26	35.58	2.15	1.56	15.17	5.22
		2011-2012	0.79	0.17	32.35	4.17	1.66	10.01	10.16
7	HERO MOTORS	2010-2011	0.96	0.24	30.61	3.7	1.86	14.74	8.68
		2014-2015	1.36	0.4	27.67	12.17	0.59	18.54	31.64
		2013-2014	1.26	0.23	27.48	11.41	0.8	13.37	28.4
		2012-2013	1.22	0.2	26.91	10.64	0.93	10.22	26.23
		2011-2012	1.11	0.08	25.69	12.26	1.31	4.25	28.97
8	MAHINDRA & MAHINDRA	2010-2011	0.96	0.03	26.55	12.5	2.63	2.48	22.42
		2014-2015	1.13	0.52	49.79	10.36	0.71	23.2	12.65
		2013-2014	1.29	0.62	48.81	10.34	0.86	21.69	13.96
		2012-2013	1.1	0.49	51.26	10.46	0.87	18.96	16.2
		2011-2012	1.08	0.43	43.97	10.75	0.96	20.99	15.17
9	MARUTI SUZUKI	2010-2011	0.91	0.32	39.91	14.19	0.89	18.55	18.01
		2014-2015	0.93	0.19	38.87	9.05	0.42	7.26	14.51
		2013-2014	1.74	0.27	39.57	7.65	0.46	10.79	11.96
		2012-2013	1.62	0.33	36.46	6.22	0.44	10.8	11.19
		2011-2012	1.69	0.52	30.84	5.56	0.47	8.86	9.62
#	SUNDARAM CLAYTON LIMITED	2010-2011	2.39	0.83	32.32	7.75	0.33	7.5	16.87
		2014-2015	1.04	0.46	48.75	6.25	1.61	48.63	8.63
		2013-2014	0.98	0.61	51.25	4.97	1.75	54.37	6.44
		2012-2013	0.92	0.35	49.85	3.09	2.13	56.05	3.53
		2011-2012	0.91	0.33	46.94	7.82	2.26	55.89	8.8

4. Finding and Discussions

The current ratio and quick ratios of Tata has shown a decreasing trends but it has increased in the year 2011-12 and 2014-15. The quick ratio of Tata has shown decreasing trends but it has increased in the year 2014-2015. Ashok Leyland has shown a decreasing & increasing trends but it has increased in the year 2010-11, 2012-2013 and 2014-15. The quick ratio of Ashok Leyland has shown decreasing & increasing trends but it has increased in the year 2010-2011, 2012-2013 & 2014-2015. Bajaj Auto has shown an increasing trends but it has decreased in the year 2010-11 and 2013-14. The quick ratio of Bajaj Auto has shown decreasing trends but it has increased in the year 2011-2012. Eicher has shown a decreasing trends but it has increased in the year 2010-11. The quick ratio of Eicher has shown decreasing trends but it has increased in the year 2010-2011. Force has shown a decreasing trends but it has increased in the year 2011-12. The quick ratio of Force has shown decreasing trends but it has increased in the year 2011-2012. TVS has shown a increasing trends but it has decreased in the year 2011-12. The quick ratio of TVS has shown increasing trends but it has decreased in the year 2011-2012 & 2014-2015. Hero has shown a increasing trends but it has

decreased in the year 2010-11. The quick ratio of Hero has shown increasing trends but it has decreased in the year 2010-2011. Mahindra & Mahindra has shown an increasing trends but it has decreased in the year 2014-15. The quick ratio of Mahindra & Mahindra has shown increasing trends but it has decreased in the year 2014-2015. Maruti Suzuki has shown a decreasing trends but it has increased in the year 2010-11 and 2013-14. The quick ratio of Maruti Suzuki has shown decreasing trends but it has increased in the year 2010-2011. Sundaram Clayton has shown a increasing trends but it has decreased in the year 2011-12. The quick ratio of Sundaram Clayton has shown increasing trends but it has decreased in the year 2014-2015.

The gross margin ratio of Tata has shown an increasing trends but it has decreased in the year 2011-12 and 2014-15. The net profit margin ratio of Tata has shown decreasing trends but it has increased in the year 2010-2011. It also shows a negative net profit margin ratio in 2013-2014 & 2014-2015. Ashok Leyland has shown an increasing trends but it has decreased in the year 2014-15. The net profit margin ratio of Ashok Leyland has shown decreasing trends but it has increased in the year 2014-2015. It also shows a negative net profit margin ratio in 2013-2014. Bajaj Auto has shown an increasing trends but it has decreased in the

year 2011-12 and 2014-15. The quick ratio of net profit margin has shown decreasing trends but it has increased in the year 2010-2011, 2012-2013 & 2013-2014. Eicher has shown an increasing trends but it has decreased in the year 2011-12. The net profit margin ratio of Eicher has shown increasing trends but it has decreased in the year 2011-2012, 2012-2013. Force has shown an increasing trends but it has decreased in the year 2011-12 and 2014-15. The net profit margin ratio of Force has shown decreasing trends but it has increased in the year 2013-2014, 2014-2015. TVS has shown an increasing trends but it has decreased in the year 2014-15. The net profit margin ratio of TVS has shown increasing trends but it has decreased in the year 2012-2013. Hero has shown an increasing trends but it has decreased in the year 2011-12 and 2014-15. The net profit margin ratio of Hero has shown increasing trends but it has decreased in the year 2011-2012, 2012-2013. Mahindra & Mahindra has shown an increasing trends but it has decreased in the year

2013-14. The net profit margin ratio of Mahindra & Mahindra has shown decreasing trends but it has increased in the year 2014-2015. Maruti Suzuki has shown an increasing trends but it has decreased in the year 2011-12 and 2014-15. The net profit margin ratio of Maruti Suzuki has shown increasing trends but it has decreased in the year 2011-2012. Sundaram Clayton Limited has shown an increasing trends but it has decreased in the year 2014-15. The net profit margin ratio of Sundaram Clayton Limited has shown increasing trends but it has decreased in the year 2012-2013.

Correlations between profitability (Gross Profit ratio) and Liquidity (other Ratios)

The Correlations between profitability (Gross Profit ratio) and Liquidity (other Ratios) is shown in table-2 as under:

Table 2: Correlations between profitability (Gross Profit ratio) and Liquidity (other Ratios)

		GPR	CR	QR	ROA	REC_TUR	LIQ_R
GPR	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	50					
CR	Pearson Correlation	.759**	1				
	Sig. (2-tailed)	.000					
	N	50	50				
QR	Pearson Correlation	-.019	.260	1			
	Sig. (2-tailed)	.897	.069				
	N	50	50	50			
ROA	Pearson Correlation	.049	.178	.083	1		
	Sig. (2-tailed)	.736	.215	.566			
	N	50	50	50	50		
REC_TUR	Pearson Correlation	-.086	-.290*	.286*	-.101	1	
	Sig. (2-tailed)	.551	.041	.044	.486		
	N	50	50	50	50	50	
LIQ_R	Pearson Correlation	-.064	-.239	-.112	-.102	.445**	1
	Sig. (2-tailed)	.656	.095	.440	.481	.001	
	N	50	50	50	50	50	50

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

It is clear from table-2 that the liquidity and profitability goes simultaneously in the automobile companies as Significant ($p < 0.05$) correlations were found between the Profitability (GPR) and Current ratios. Further insignificant

but positive correlations were also found between other ratios and Profitability. The Correlations between profitability (Net Profit ratio) and Liquidity (other Ratios) is shown in table-3 as under:

Table 3: Correlations between profitability (Net Profit ratio) and Liquidity (other Ratios)

		NPR	CR	QR	ROA	REC_TUR	LIQ_R
NPR	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	50					
CR	Pearson Correlation	.468**	1				
	Sig. (2-tailed)	.001					
	N	50	50				
QR	Pearson Correlation	.108	.260	1			
	Sig. (2-tailed)	.457	.069				
	N	50	50	50			
ROA	Pearson Correlation	.923**	.178	.083	1		
	Sig. (2-tailed)	.000	.215	.566			
	N	50	50	50	50		
REC_TUR	Pearson Correlation	-.105	-.290*	.286*	-.101	1	
	Sig. (2-tailed)	.466	.041	.044	.486		
	N	50	50	50	50	50	
LIQ_R	Pearson Correlation	-.113	-.239	-.112	-.102	.445**	1

	Sig. (2-tailed)	.434	.095	.440	.481	.001	
	N	50	50	50	50	50	50
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

It is clear from table-3 that the liquidity and profitability goes simultaneously in the automobile companies as Significant ($p < 0.05$) correlations were found between the Profitability (NPR) with Return on assets and Current ratios. Further insignificant but positive correlations were also found between other ratios and Profitability.

5. Conclusion

The paper revealed that the liquidity and profitability goes simultaneously in the automobile sector as the top 10 companies are having increased or decreased in the profit with the change in the liquidity. The companies have managed it well. Further the liquidity and profitability goes simultaneously in the automobile companies as shown by correlations that Profitability (GPR) and Current ratios in case of GPR and Profitability (NPR) with Return on assets and Current ratios have shown significant correlations.

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