



# Resurgence Capacities Of Indian Auto Car Sector: An Empirical Analysis.

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**Abstract:** The Indian Auto industry became one of the largest sectors in the world. It was the 7<sup>th</sup> largest manufacturer of commercial vehicles in 2017. Indian automobile industry comprises of different sub-sectors, where auto car sector plays an important role towards Indian GDP and employment opportunities. This paper measures the financial performance of auto car industry for the period of 2013-2022. The purpose of this study is to evaluate and compare the financial performance among the selected companies to understand their business efficiencies.

**Key words:** Financial performance, Auto car sector, Ratio, Descriptive statistics

JEL Classification: C87, D57, E37, G17, M41.

## Introduction:

The automobile sector is one of the key sectors of the country as it is contributing greatly to the economy of India. By overcoming different difficulties, from 2000 to 2010, almost all the major automotive companies expanded their presence in India by establishing manufacturing hubs in different parts of the country. In this era, govt. also introduced mandatory emission standard to reduce the pollution produced by vehicles which came into force to the main cities of the country. Now it is mandatory for all vehicles makers to manufacture, sell and registered only BS-VI vehicles from April 1, 2020 in India.

Recognized as a core sector, the auto industry contributes about 49 percent to India's GDP and is responsible for about 37 million jobs directly and indirectly. The government has also takes some initiatives to establish manufacturing units through make in India project and supportive policies such as the Automotive Mission Plan 2026, scrappage policy and Production-Linked Incentive Scheme (PLI) for large scale electronics manufacturing to boost the Indian automotive sectors in coming years [National Automotive Mission Plan (AMP 2026), Govt. of India and Society of Automobile Manufacture].

At COP 21, India had pledged to reduce its carbon footprint by 33 to 35 percent by 2030 below 2005 levels. So it is the time to switch to alternative fuel options to minimize air pollution. By considering pollution, government of India had notified the National Electric Mobility Mission Plan (NEMMP) 2020 which seeks to enhance national energy security, mitigate adverse environmental impacts from road transport vehicles and boost domestic manufacturing capabilities for Electric Vehicles. In addition to this, the government has notified phase-II of Faster adoption and Manufacturing of Hybrid and Electric Vehicles(FAME) scheme to stimulate the market of EVs in the country, de-licensed the charging infrastructure business and specified guidelines & standards for charging infrastructure for electric vehicle thereby by opening up the market of public charging infrastructure & ensuring a road map for development of charging infrastructure, and introduced various financial incentives to reduce upfront cost of EVs and Charging infrastructure(Status quo analysis by NITI Aayog) . The norms of foreign investment and technological advancement have also been liberalized over the years and 100% FDI is also admissible by the govt.

## Review Literature:

A study carried out on Indian automobile industry to show the relationship between liquidity and profitability and found that there is significant difference in liquidity and profitability position of selected companies in India (**SnehLata, Anand (2017)**). Another study of profitability analysis of Indian automobile industry for the period between 2014 to 2017 and they considered five companies which are Tata Motors Ltd., Mahindra and Mahindra Ltd., Maruti Suzuki India Ltd., Hero MotoCorp Ltd. and Bajaj Auto Ltd. They studied the profitability of those companies based on Profit Before Depreciation Interest & Taxes, Profit Before Interest & Taxes, Profit Before Taxes, Net Profit, Return on Net Worth, Return on Capital Employed, Return on Assets, and Assets Turnover Ratio and concluded that Bajaj auto had highest Net Profit Margin, Hero MotoCorp had the highest ROCE and ROA (**Ranjith Kumar, Eahambaram(2018)**). A study which shows that Short-term solvency position is not at all satisfactory as debt equity ratio and current assets to shareholders fund ratio shows fluctuating trend by analyzing the relationship between profitability and solvency position of selected automobile companies in India (**Jegadeeshwaran and Basuvaraj, 2018**). Another study found a strong relationship among NPM, ROA, ROE and ROCE and also found that higher ROE of the companies was due to higher assets turnover ratio which indicates higher operating efficiency with low debt (**Bhagyalakshmi and Saraswathi, 2019**). A study which shows a significant difference in all

the ratios like CR, QR, ITR, FATR, TATR and ATR of all the companies during the period under study (Chotaliya, 2020).

### Statement of Problem:

Automobile industry is the key indicators of Indian economy and act as a catalyst of country's economic and industrial development. Currently, the Indian automobile industry contributes 7.1% of India's GDP and 49% of its manufacturing GDP, The EV (Electronic Vehicle) market is expected to grow at CAGR of 49% between 2022-2030. In order to ascertain the resurgence of Indian automobile industry, measuring financial performance of automobile industry in India is utmost important.

### Objectives of the study:

- i) To measure the overall growth strategies of the selected companies.
- ii) To analyze the impact of covid-19 on financial performance of the selected companies.
- iii) To measure the liquidity, profitability and efficiency of the selected companies.

### Research Hypothesis:

- i)  $H_0$ -There is no significant difference in profitability ratios for the selected companies for a given period of time.
- ii)  $H_1$ -There is no significant difference in liquidity ratios for the selected automobile companies for a given period of time.
- iii)  $H_2$ -There is no significant difference in activity ratios for the selected companies for a given period of time.

### Research Methodology:

#### Sources of Data:

The data are collected for the study is mainly from secondary sources. The required data were collected from Capitaline Database, moneycontrol.com, company annual report, company websites etc.

#### Period of Study:

The Study covers a period of last ten years i.e 2013 to 2022.

#### Tools used for Analysis:

The data analysis will be done using statistical tools like descriptive statistics, ratio analysis, and ANOVA.

#### Sample Size:

Thirty automobile companies which are chosen as sample size for the study based on Yamane's formula. The selected companies are: **Comp1**-Maruti Suzuki, **Comp2**-Fiat India Auto, **Company3**-Ford India, **Company4**-General Motors India, **Company5**-Hindustan Motors, **Company6**-Honda Cars India, **Company7**-Hyundai

Motor I, **Company8-** Mahindra Elect, **Company9-**Skoda Auto Volks, **Company10-**Toyota Kirloskar, **Company11-**BMW India, and **Company12-** Renault India.

**Ratio used for analysis the data:** Ratio analysis is a widely used tool of financial analysis. It is used as the systematic use of ratio to interpret the financial statement so that the strength and weaknesses of a firm as well as current financial performance can be ascertained.

**Ratio Computed:**

CR (Current Ratio), CFCR (Cash Flow Coverage Ratio), CLCR (Current Liability Coverage Ratio), GPR (Gross Profit Ratio), DTR (Debtors Turnover Ratio), FATR (Fixed Assets Turnover Ratio).

**Empirical Results and Discussion:**

The data for the study is composed of twelve companies and the data are presented in the form comparative manner like AM, SD and CV for Liquidity, Profitability and Efficiency Ratios as under:

**Table1: Liquidity Ratio**

	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
CR	COMP1	0.68	0.60	0.55	0.47	0.46	0.56	0.60	0.59	0.69	0.86	0.61	0.12	0.19
	COMP2	1.43	1.65	1.72	1.55	1.57	1.58	1.60	1.46	1.00	0.74	1.43	0.31	0.22
	COMP3	0.83	0.70	0.63	0.71	0.82	0.91	1.02	1.11	0.91	0.93	0.86	0.15	0.17
	COMP4	1.09	1.41	1.44	1.35	1.17	0.95	0.90	0.47	0.41	0.58	0.98	0.38	0.39
	COMP5	0.25	0.14	0.12	0.21	0.14	0.12	0.25	0.58	0.60	0.52	0.29	0.20	0.67
	COMP6	0.85	0.79	0.75	0.60	0.50	0.46	0.45	0.38	0.38	0.58	0.57	0.17	0.30
	COMP7	2.08	2.01	2.19	2.19	1.97	1.65	1.31	1.17	1.15	1.25	1.70	0.44	0.26
	COMP8	1.27	0.85	0.92	1.26	1.59	1.37	0.59	0.42	0.74	0.78	0.98	0.38	0.38
	COMP9	1.03	1.15	1.30	1.47	1.18	0.91	0.92	1.00	1.01	1.09	1.11	0.18	0.16
	COMP10	1.91	2.36	2.40	2.03	1.83	1.85	1.78	1.46	1.08	1.03	1.77	0.47	0.26
	COMP11	1.03	0.98	0.99	1.03	1.03	1.05	1.07	1.10	1.18	1.73	1.12	0.22	0.20
	COMP12	1.33	1.41	1.27	1.00	0.85	0.58	0.40	0.58	0.64	0.55	0.86	0.37	0.43

	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
CFCR	COMP1	4.28	16.66	19.95	44.07	106.36	21.26	36.75	12.26	2.69	3.10	26.74	31.22	1.17
	COMP2	0.48	0.70	0.49	0.69	0.11	0.24	-0.05	0.51	-0.37	-0.04	0.28	0.36	1.29
	COMP3	-0.67	0.05	0.48	0.26	0.24	0.16	0.09	0.03	-0.67	-0.20	0.04	0.31	8.78
	COMP4	-0.92	1.73	0.55	0.66	-0.52	-1.91	-4.47	-7.00	-7.00	-0.35	-1.25	2.62	-2.09
	COMP5	-1.01	-0.26	-0.08	-0.78	-1.87	0.30	0.22	0.81	-1.87	-1.11	-0.44	0.79	-1.82
	COMP6	0.49	0.22	-0.07	1.24	0.40	0.85	-0.06	0.81	-0.58	-0.58	0.33	0.54	1.62
	COMP7	4.32	3.96	3.71	3.99	2.77	2.02	3.05	1.44	0.65	0.65	2.69	1.34	0.50
	COMP8	-0.19	-0.17	-0.02	-1.41	-7.51	-5.26	-2.28	-0.40	-7.51	-0.05	-1.82	2.57	-1.41
	COMP9	0.32	1.13	0.65	0.57	0.12	1.07	0.17	0.34	0.12	0.28	0.48	0.37	0.78
	COMP10	0.34	0.28	-0.04	0.36	0.73	0.29	0.03-	0.48	-0.04	-0.04	0.26	0.24	0.91
	COMP11	0.68	0.55	-0.04	-0.03	0.43	0.20	-0.25	1.79	-0.34	-0.34	0.30	0.62	2.04
	COMP12	0.06	1.84	-0.13	-0.10	-0.24	-0.42	-0.59	-0.37	-0.91	0.46	-0.04	0.76	-18.70

CLCR	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
	COMP1	0.11	0.56	0.30	0.47	0.77	0.81	0.78	0.75	0.72	0.73	<b>0.60</b>	0.24	0.40
	COMP2	0.17	0.49	0.61	0.71	0.15	0.84	-0.13	1.49	-1.12	-0.04	0.32	0.69	2.19
	COMP3	-0.32	0.06	0.67	0.33	0.32	0.22	0.17	0.07	-0.12	-0.26	0.11	0.30	2.65
	COMP4	-0.30	0.38	0.17	0.19	-0.19	-0.24	-0.43	-1.06	-0.25	-0.31	-0.20	0.40	-1.96
	COMP5	-0.98	-0.13	-0.04	-0.35	-0.39	0.10	0.08	0.40	-0.15	-0.61	-0.21	0.40	-1.91
	COMP6	0.35	0.17	-0.07	0.48	0.30	0.54	-0.09	0.63	0.03	-0.55	0.18	0.36	2.01
	COMP7	0.58	0.62	0.63	0.63	0.71	0.48	0.65	0.46	0.46	0.35	<b>0.56</b>	0.11	0.20
	COMP8	-0.58	-0.40	-0.02	-0.32	-1.13	-1.51	-1.55	-1.05	-1.36	-0.06	<b>-0.80</b>	0.59	-0.74
	COMP9	0.14	0.46	0.20	0.17	0.12	0.62	0.31	0.57	0.13	0.68	0.34	0.22	0.65
	COMP10	0.29	0.32	-0.06	0.44	0.82	0.39	0.05	0.72	0.50	-0.08	0.34	0.31	0.90
	COMP11	0.25	0.49	-0.04	-0.03	0.28	0.16	-0.08	0.40	0.04	-0.16	0.13	0.22	1.67
	COMP12	0.02	0.39	-0.05	-0.12	-0.21	-0.66	-0.54	-0.54	-0.31	0.16	-0.19	0.33	-1.79

CASH RATIO	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV	
	COMP1	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.02	<b>0.01</b>	0.01	0.92
	COMP2	0.20	0.65	0.47	0.08	0.02	0.32	0.66	0.98	0.01	0.11	0.11	0.35	0.33	1.07
	COMP3	0.20	0.09	0.36	0.02	0.15	0.08	0.13	0.24	0.11	0.42	0.18	0.13	1.41	
	COMP4	0.67	0.69	0.38	0.39	0.37	0.12	0.05	0.20	0.03	0.07	0.30	0.25	1.21	
	COMP5	0.04	0.08	0.04	0.07	0.19	0.00	0.00	0.00	0.00	0.04	0.05	0.06	0.79	
	COMP6	0.03	0.09	0.00	0.01	0.04	0.01	0.01	0.06	0.00	0.22	0.05	0.07	0.69	
	COMP7	1.59	1.33	1.26	1.36	1.21	0.73	0.43	0.14	0.22	0.26	<b>0.85</b>	0.55	1.54	
	COMP8	0.00	0.02	0.00	0.00	0.07	0.09	0.25	0.12	0.02	0.01	<b>0.06</b>	0.08	0.71	
	COMP9	0.08	0.18	0.03	0.06	0.05	0.00	0.00	0.00	0.13	0.24	0.08	0.08	0.95	
	COMP10	0.61	0.89	0.98	0.77	0.54	0.38	0.34	0.49	0.55	0.38	0.59	0.22	2.68	
	COMP11	0.16	0.22	0.01	0.07	0.04	0.00	0.00	0.00	0.01	0.03	0.06	0.08	0.73	
	COMP12	0.41	0.33	0.06	0.05	0.08	0.18	0.09	0.37	0.13	0.08	0.18	0.14	1.29	

NWCR	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV	
	COMP1	-0.07	-0.12	-0.09	-0.15	-0.21	-0.17	-0.14	-0.15	-0.09	-0.09	-0.03	<b>-0.12</b>	0.05	-2.21
	COMP2	0.25	0.30	0.30	0.25	0.33	0.27	0.35	0.33	0.29	0.04	0.27	0.09	3.12	
	COMP3	0.27	0.19	0.28	0.11	0.11	0.04	0.11	0.12	0.07	0.16	0.15	0.08	1.84	
	COMP4	0.05	0.16	0.36	0.23	0.31	-0.06	0.06	-0.06	2.29	-0.12	0.32	0.71	0.45	
	COMP5	-0.50	4.68	3.27	3.33	1.70	1.41	1.60	4.00	-1.68	-0.65	1.72	2.14	0.80	
	COMP6	-0.03	-0.22	-0.03	-0.07	-0.07	-0.41	-0.08	-0.42	-0.25	-0.13	-0.17	0.15	-1.14	
	COMP7	0.60	0.50	0.48	0.56	0.58	0.43	0.28	0.14	0.21	0.18	<b>0.40</b>	0.18	2.24	
	COMP8	0.19	0.08	0.01	0.08	0.20	0.20	0.10	-0.02	0.00	-0.02	<b>0.08</b>	0.09	0.89	
	COMP9	0.08	0.19	0.12	0.38	0.39	0.08	0.23	0.25	0.14	0.19	0.21	0.11	1.84	
	COMP10	0.40	0.57	0.54	0.51	0.38	0.34	0.30	0.32	0.18	0.17	0.37	0.14	2.66	
	COMP11	0.33	0.37	0.38	0.42	0.21	0.21	0.56	0.43	0.73	0.66	0.43	0.17	18.44	
	COMP12	0.82	0.79	0.81	0.36	0.15	0.25	-0.32	-0.09	-0.33	-1.41	0.10	0.69	0.15	

**Interpretation:**

The above table revealed that the CR of Company 10 (Toyota Kirloskar) is highest compared to all other companies during this time period and company 7(Hyundai Motor I) and company 2(Fiat India Auto) also shows good trend during these time period whereas company 5 (Hindustan Motor) shows its worst performance in this time period but CV of company 5 is 0.67, which shows high chances of variability. The CV of company 10 is also not so high which reflects less chances of variability. The first five companies show decreasing trend in this study period whereas others companies show increasing trend in this same period. So, it can be interpreted that the company 7, company8, company 9, company10, company11 and company 12 efficiently manage their short-term assets on hand to liquidate to cover all short-term liabilities than other companies in this row.

Again, CFCR of company 1(Maruti Suzuki) is 26.74 means the business is financially strong and has the capacity to fast-track its debt payments if needed. Accelerating debt payments allows the company to use more of its profits sooner for added capital and increased cash flow. Whereas other companies and most specifically company 8(Mahindra Elect) establish its worst position in this row, means the business may fail with interest payments. All the companies reflect fluctuating trend during the study period.

On the other hand, CLCR of all companies also incorporate a fluctuating trend during the study period and it also shows that business is not generating enough cash to pay of its immediate obligations, so it may be at significant risk of bankruptcy in future.

The Cash ratio is a measurement of a company’s liquidity. It specifically calculates the ratio of a company’s total cash and cash equivalents to its current liabilities. The metric evaluates company’s ability to repay its short-term debt with cash or near cash resources, such as easily marketable securities. This information is useful to creditors when they decide how much money, if any, they would be willing to loan a company. This ratio is more conservative than any other liquidity ratios because it only considers a company’s most liquid resources. Here it has been observed that company 7 (Hyundai Motor I) recently make good performance and during the study period that any other companies in this study. Whereas company1(Maruti Suzuki) make worst performance during the period under study. Cash ratio of all the companies is less than 1, which means insufficient cash on hand exists to pay off short-term debt.

The net working capital ratio (NWCR) measures the liquidity of a business by determining its ability to repay its current liabilities with its current assets. An optimal net working capital ratio is 1.5 to 2.0, but that can depend on the business’s industry. It measures the liquidity of business by showing how effectively it is at paying off its current liabilities with its current assets. The higher the NWCR greater is the solid financial ground in terms of liquidity and vice versa. Here only company 5(Hindustan Motors) shows a very good track record during the study period. Whereas all other companies facing high liquidity problems during the period under study. Company 1(Maruti Suzuki) and company 6(Honda Cars India) shows worst position and seriously affected by liquidity problems.

**Table2: Profitability Ratio**

	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
GPR	COMP1	0.08	0.12	0.14	0.16	0.17	0.18	0.18	0.15	0.13	0.11	0.14	0.03	0.23
	COMP2	0.09	0.16	0.13	0.11	0.12	0.29	0.19	0.19	0.14	0.22	0.16	0.06	0.37
	COMP3	-0.36	0.01	-0.22	0.06	0.09	0.04	0.03	-0.01	-0.02	-0.02	-0.04	0.14	-3.51
	COMP4	-10.35	-0.39	0.06	0.12	0.09	-0.20	-0.19	-0.44	-1.08	-0.24	-1.26	3.21	-2.55
	COMP5	0.00	6.03	0.19	51.48	0.00	-12.81	-37.22	-2.64	0.04	-0.08	0.50	21.71	43.50
	COMP6	0.08	-0.09	-0.01	0.07	0.10	0.07	0.08	0.07	-0.02	-0.23	0.01	0.10	8.68
	COMP7	0.12	0.11	0.11	0.12	0.12	0.12	0.10	0.10	0.10	0.09	0.11	0.01	0.10
	COMP8	-0.05	-0.25	-0.02	-0.05	-0.68	-0.65	-1.08	-1.66	-1.39	-0.43	-0.63	0.58	-0.93
	COMP9	0.09	0.10	0.11	0.08	0.08	0.08	0.10	0.16	0.19	0.11	0.11	0.04	0.33
	COMP10	0.06	0.03	0.06	0.07	0.12	0.07	0.10	0.09	0.03	0.04	0.07	0.03	0.45
	COMP11	0.04	0.03	0.01	0.00	0.08	-0.05	0.05	0.04	0.11	0.01	0.03	0.04	1.38
	COMP12	0.05	-0.02	-0.16	-0.03	-0.10	-0.03	-0.14	-0.06	-0.03	0.01	-0.05	0.07	-1.28

	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
NPR	COMP1	0.04	0.06	0.04	0.07	0.08	0.08	0.08	0.06	0.06	0.05	<b>0.06</b>	0.02	4.08
	COMP2	0.04	0.07	0.05	0.03	0.05	0.14	0.09	0.08	0.06	0.10	0.07	0.03	2.26
	COMP3	-0.05	-0.01	0.02	0.01	0.03	-0.03	-0.04	-0.07	-0.07	-0.07	-0.03	0.04	-0.75
	COMP4	-13.22	-0.49	0.01	0.06	0.12	-0.22	-0.21	-0.48	-0.39	-0.24	-1.51	4.12	-0.37
	COMP5	0.00	-0.77	-4.57	49.24	0.00	-14.97	-39.52	-2.78	-0.56	-0.21	-1.41	21.65	-0.07
	COMP6	0.03	-0.06	-0.16	0.07	0.03	-0.02	0.03	0.03	-0.06	-0.28	-0.04	0.11	0.35
	COMP7	0.06	0.05	0.05	0.06	0.05	0.06	0.04	0.04	0.04	0.04	<b>0.05</b>	0.01	5.84

	COMP8	-0.15	-0.51	-0.20	-0.21	-1.04	-1.02	-1.52	-2.55	-2.29	-0.87	<b>-1.04</b>	0.85	-1.07
	COMP9	0.01	0.11	0.03	0.03	0.01	-0.02	-0.02	0.04	0.06	-0.12	0.01	0.06	0.23
	COMP10	0.03	0.00	0.01	0.03	0.05	0.03	0.04	0.04	0.00	0.00	0.02	0.02	1.07
	COMP11	0.01	0.00	-0.01	0.01	0.04	-0.05	0.05	0.04	0.11	0.01	0.03	0.01	0.72
	COMP12	0.04	-0.03	-0.17	-0.05	-0.12	-0.05	-0.17	-0.07	-0.03	0.00	-0.07	0.07	-0.92

EPS	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
	COMP1	124.71	140.06	187.11	248.36	255.69	243.38	177.63	122.89	92.15	79.21	<b>167.12</b>	65.49	2.55
	COMP2	25.77	23.63	11.74	7.78	15.02	11.64	12.85	16.38	8.86	30.00	16.37	7.56	2.16
	COMP3	-28.53	-2.14	-62.10	2.42	6.01	-6.27	-7.90	-10.38	-10.47	-8.81	-12.82	19.64	-0.65
	COMP4	-0.16	-1.06	-0.01	0.27	0.49	-0.80	-0.74	-1.30	-8.56	0.00	-1.19	2.66	-0.45
	COMP5	0.89	0.18	-0.04	1.28	2.71	0.00	0.00	0.00	0.00	0.00	0.50	0.90	0.56
	COMP6	2.15	-14.80	-15.59	10.64	6.32	0.00	3.34	4.68	-6.20	0.00	-0.95	8.71	-0.11
	COMP7	3521.99	2273.32	2898.31	3177.35	2614	2428	1603.06	1273.82	1363.87	1261.79	<b>2241.58</b>	829.71	2.70
	COMP8	-1.96	-2.99	-1.71	-1.72	0.00	0.00	0.00	0.00	0.00	0.00	<b>-0.84</b>	1.14	-0.74
	COMP9	2.88	10.69	11.75	4.47	1.86	0.12	1.66	9.34	6.50	1.19	5.05	4.26	1.19
	COMP10	7.41	-0.79	2.68	5.82	13.80	7.97	7.21	7.56	-0.90	0.00	5.08	4.75	1.07
	COMP11	3.86	-0.81	-3.17	1.32	7.46	0.00	2.07	0.00	6.88	0.63	1.82	3.36	0.54
	COMP12	0.62	-0.30	-2.13	-0.72	0.00	0.00	0.00	0.00	0.00	0.76	-0.18	0.80	-0.22

ROCE	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
	COMP1	8.50	10.03	8.37	17.78	23.17	22.88	22.9	18.61	15.56	15.10	<b>16.29</b>	5.84	2.79
	COMP2	14.23	14.12	8.73	7.42	11.1	8.81	11.42	14.35	10.90	21.88	12.30	4.16	2.95
	COMP3	0.00	0.00	0.00	4.61	8.37	0.00	0.00	0.00	0.00	0.00	1.30	2.88	0.45
	COMP4	0.00	0.00	0.00	3.28	4.52	0.00	0.00	0.00	0.00	0.00	0.78	1.67	0.47
	COMP5	4.38	-1.17	0.00	18.45	-21.63	0.00	0.00	0.00	0.00	0.00	0.00	9.60	0.00
	COMP6	11.17	0.00	0.00	7.67	16.95	0.00	13.26	12.83	0.00	0.00	6.19	6.90	0.90
	COMP7	20.72	15.71	20.95	27.11	26.66	30.29	23.93	19.89	22.26	22.10	<b>22.96</b>	4.19	5.48
	COMP8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>	0.00	0.00
	COMP9	5.14	6.94	12.28	11.19	11.00	0.18	3.11	10.10	8.53	-6.02	6.25	5.80	1.08
	COMP10	10.05	-0.41	4.89	16.70	21.14	11.47	14.50	16.52	-2.49	0.99	9.34	8.17	1.14
	COMP11	6.06	3.84	1.36	-0.08	7.42	-6.00	7.91	3.77	3.34	1.31	2.89	4.09	0.71
	COMP12	10.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-22.84	13.33	0.15	9.54	0.02

RONW	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
	COMP1	7.14	8.48	6.79	13.19	16.37	17.35	16.89	14.52	12.4	12.48	<b>12.56</b>	3.94	3.19
	COMP2	13.28	13.96	7.74	5.48	11.51	9.84	11.97	13.74	10.09	26.70	12.43	5.70	2.18
	COMP3	0.00	0.00	0.00	2.41	9.86	0.00	0.00	0.00	0.00	0.00	1.23	3.13	0.39
	COMP4	0.00	0.00	0.00	2.64	8.66	0.00	0.00	0.00	0.00	0.00	1.13	2.77	0.41
	COMP5	4.66	-1.92	0.00	20.19	-277.81	0.00	0.00	0.00	0.00	0.00	-25.49	88.89	-0.29
	COMP6	23.08	0.00	0.00	34.30	22.51	0.00	15.60	18.74	0.00	0.00	11.42	12.93	0.88
	COMP7	18.02	13.00	17.42	20.72	21.01	24.47	20.28	18.80	22.69	13.49	<b>19.99</b>	3.37	5.94
	COMP8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>	0.00	0.00
	COMP9	3.28	20.85	8.07	10.82	5.56	-10.37	-5.12	19.25	38.98	-55.30	3.60	24.97	0.14
	COMP10	18.76	-2.14	7.02	19.99	37.61	27.59	29.83	35.62	-4.46	-0.44	16.94	15.95	1.06
	COMP11	10.28	-2.24	-8.34	3.40	21.60	-26.64	5.48	6.46	-0.32	1.91	1.16	12.61	0.09
	COMP12	11.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-92.75	72.34	-0.92	39.38	-0.02

## Interpretation:

Cash Flow Margin Ratio (CFMR) tells us whether a company's business model is sustainable or not. CFMR is a profitability ratio that measures business's cash from operating activities as a percentage of company's sales revenue over a given period of time. It is simply a demonstration of how well a business firm can able to convert sales to cash. If a company can't produce enough profit from sales and operating activities, it is at risk of becoming insolvent. In general, the lower a company's cash flow margin is, the less profitable it is. From the above table it has been observed that, company 4(General Motors India) reaches its worst position among the all other companies and some other companies like company 5(Hindustan Motors), company 8(Mahindra Electric), and Company 12(Renault India) also show the same trend as General Motors India. Beside that all other companies show fluctuating trend during the study period.

Gross Profit Ratio (GPR) is a yardstick for measuring how a company makes a profit from its products and services. It can also compare companies with sales revenue. Generally, a company aims to generate a higher gross profit margin. A higher ratio indicates that the company is producing more efficiently by way of low-cost production, increased sales price etc. Conversely, a low ratio indicates that the company is not producing efficiently, which requires careful, in-depth analysis. From the above table it can be seen that only GPR of company 5(Hindustan Motors) marked as a good indicator among all the companies. Whereas GPR of all other companies show fluctuating trend during this study period. By reviewing more critical analysis, it has been observed that especially company 4 (General Motors India) and many other companies such as company 8(Mahindra Electric), company 12 (Renault India) and company 3(Ford India) indicating very bad performance regarding GPR. It means to say that company is not producing efficiently, which in terms require careful and in-depth analysis of related matters. Special emphasize should be given on higher cost of production, a decline sales price, poor pricing strategy or any change in the sales mix etc.

Net Profit Margin also known as net Income Margin is a profitability ratio which depicts how much profit a company generates from the total revenue. It measures the financial stability of a company by signifying that whether a company is doing well or not. As it deducts all expenses like operating cost, interest and taxes so higher the ratio indicated how efficiently the company operates and handles its expenses. From the above table it has been observed that no such company generates enough net profit during the study period and more specifically the profit generating capability of company 4(General Motors India), company5(Hindustan Motors), company8(Mahindra Electric), company 12 (Renault India) and company 6(Honda Cars India) is very undesirable during the study period. Beside these companies, the other companies also not able to achieve constant growth rather the companies show either fluctuating or diminishing trend during the period under study.

EPS is a company's net profit divided by the number of common shares it has outstanding. EPS indicates how much money a company makes for each share of its stock and it is a widely used metric for estimating corporate values. Higher the EPS number greater is the profitability of a company. From the above table it has been observed that EPS of company 7(Hyundai Motor I) is continuously increasing throughout the study period and reaches its top most position among all the companies. Beside that EPS of company 1(Maruti Suzuki) also follow a good benchmark over the years. Some of the companies like company 3(Ford India), company 4(General Motors India), company6(Honda Cars India), company 8(Mahindra Electric) and company 12(Renault India) not able to manage its EPS efficiently during the study period. Company 2(Fiat India Automobile), Company 5 (Hindustan Motors), company 9(Skoda Auto Volks), company10 (Toyota Kirloskar) and company 11 (BMW India) also show increasing trend during the study period.

Return on Capital Employed is a financial statistic that may be used to analyze the profitability and capital efficiency of a firm. Alternatively, this ratio can help to understand how well a company is generating profits from its capital. Higher the ROCE greater is the capital efficiency of the company. ROCE of Company 7(Hyundai Motor I), Company 1(Maruti Suzuki) and company 2 (Fiat India Automobile) perform really well among all others company during the period under study. Beside that all other companies generate positive ROCE except company 5(Hindustan Motors) and company 8(Mahindra Electric). So, from the above table, it can be state that Company 7(Hyundai Motor I), Company 1(Maruti Suzuki) and company 2 (Fiat India Automobile) can able to manage its capital efficiently and also generate profits by using its capital compare to other automobile companies operating in the same line of business except company 5(Hindustan Motors) and company 8 (Mahindra Electric). These two companies can't able to generate any amount of profit during the study period.

Return on Net worth is a profitability ratio that determine if a company has been more or less effective at earning profits on shareholders' equity over time, it is critical to examine this measure throughout a number of time periods. Actually, it explains the efficiency of the shareholders' capital to generate profit and additionally a decrease in the value of shareholders' stock can cause an increase in RONW. From the above table it has been observed that RONW of company 7(Hyundai Motor I), company 10 (Toyota Kirloskar), company 1(Maruti Suzuki), company 2 (Fiat India Automobile) and company 6 (Honda Cars India) is very much influential compare to others companies in this row. Beside that so many companies generate minimum amount of RONW except company 5 (Hindustan Motors), company 12(Renault India) and company 8(Mahindra Electric). These particular companies generate either very minimum or negative RONW during the period under study. So it can be state that those particular companies can't able to manage shareholders capital efficiently except company 7(Hyundai Motor I), company 10 (Toyota Kirloskar), company 1(Maruti Suzuki), company 2 (Fiat India Automobile) and company 6((Honda Cars India).

**Table 3: Efficiency Ratio**

DTR	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
	COMP1	53.4	43.26	35.29	45.61	61.63	61.29	54.39	44.40	33.86	40.78	47.39	9.91	0.21
	COMP2	9.27	7.58	5.53	5.47	6.96	3.27	4.84	5.71	6.95	13.99	6.96	2.96	0.43
	COMP3	8.65	9.98	11.41	12.01	14.43	15.93	14.38	18.44	20.92	23.28	14.94	4.76	0.32
	COMP4	0.39	31.47	20.79	12.88	16.47	11.94	9.93	21.58	759.27	405.58	129.03	253.22	1.96
	COMP5	0.00	33.43	3.50	10.80	0.00	1.02	0.69	1.74	2.26	29.10	10.35	13.19	1.27
	COMP6	45.62	52.61	47.90	52.36	53.62	45.55	49.70	59.71	67.45	65.40	53.99	7.79	0.14
	COMP7	20.50	20.65	24.24	24.22	29.10	40.84	59.88	51.71	34.73	30.12	33.60	13.41	0.40
	COMP8	24.61	6.83	8.32	8.26	3.34	5.67	14.08	12.40	23.22	55.01	16.17	15.40	0.95
	COMP9	58.17	35.17	30.49	21.91	19.20	24.41	21.27	19.41	14.17	13.55	25.78	13.19	0.51
	COMP10	52.29	56.88	69.62	79.68	106.98	86.17	67.41	89.32	42.18	42.29	69.28	21.41	0.31
	COMP11	6.96	5.47	5.07	4.70	5.24	6.29	5.53	6.45	4.96	4.58	5.53	0.79	0.14
	COMP12	21.33	22.81	21.08	16.23	21.58	23.24	21.27	29.42	30.55	35.71	24.32	5.77	0.24

FATR	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
	COMP1	2.76	2.30	2.70	3.60	4.09	4.55	3.11	2.24	2.30	2.84	3.05	0.79	0.26
	COMP2	2.19	1.49	1.07	1.06	1.26	0.54	0.91	1.08	1.02	1.12	1.17	0.43	0.37
	COMP3	0.68	0.75	1.25	1.45	1.37	1.30	1.15	1.63	1.99	1.50	1.31	0.39	0.30
	COMP4	0.01	1.95	3.47	3.87	5.24	1.40	0.78	0.63	0.99	1.18	1.95	1.68	0.86
	COMP5	0.00	0.07	0.01	0.03	0.00	0.01	0.00	0.07	1.30	1.26	0.28	0.53	1.93
	COMP6	1.38	1.06	1.27	2.11	2.33	2.29	2.50	2.45	2.02	1.41	1.88	0.54	0.29
	COMP7	2.74	2.65	3.45	4.36	4.84	5.76	3.70	2.43	2.64	3.52	3.56	1.11	0.31
	COMP8	0.68	0.37	0.56	0.60	0.35	0.37	0.26	0.19	0.19	0.29	0.39	0.17	0.45
	COMP9	1.38	0.92	1.26	1.75	1.84	2.05	1.64	1.86	1.68	1.31	1.57	0.34	0.22

	<b>COMP10</b>	2.94	2.02	2.47	3.37	3.58	3.65	2.62	2.86	2.65	2.85	2.90	0.51	0.18
	<b>COMP11</b>	4.31	2.77	3.99	5.61	5.49	5.57	4.44	4.60	5.19	7.82	4.98	1.33	0.27
	<b>COMP12</b>	6.33	4.97	6.02	5.64	8.39	10.68	7.85	12.43	23.05	28.25	11.36	7.97	0.70

	COMPANY	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	MEAN	SD	CV
FATR	<b>COMP1</b>	26.82	22.45	23.12	26.52	25.53	24.17	22.36	25.11	27.53	26.99	<b>25.06</b>	1.94	12.91
	<b>COMP2</b>	17.44	10.15	7.56	8.14	10.30	8.33	17.80	19.29	16.00	15.12	13.01	4.55	2.86
	<b>COMP3</b>	4.24	4.75	8.15	9.21	9.14	8.95	8.94	9.89	7.30	6.09	7.67	2.00	3.84
	<b>COMP4</b>	0.17	7.37	8.25	8.59	7.44	4.59	4.52	4.21	5.08	6.04	5.63	2.51	2.24
	<b>COMP5</b>	0.00	15.60	0.72	0.63	0.00	0.22	0.10	1.32	9.36	8.20	3.62	5.48	0.66
	<b>COMP6</b>	1.15	8.07	7.53	10.84	11.99	10.74	15.97	24.97	20.56	10.45	13.13	5.66	2.32
	<b>COMP7</b>	17.28	15.25	16.15	17.68	17.82	17.79	16.35	14.55	15.25	17.44	<b>16.56</b>	1.22	13.60
	<b>COMP8</b>	6.43	4.86	6.91	6.11	3.34	3.54	2.74	2.23	2.02	2.55	<b>4.07</b>	1.85	2.20
	<b>COMP9</b>	6.40	4.66	5.20	8.14	9.40	9.41	9.10	9.43	7.12	4.80	7.37	1.99	3.69
	<b>COMP10</b>	17.62	12.86	14.96	22.62	21.15	20.85	17.54	20.39	15.68	14.01	17.77	3.36	5.28
	<b>COMP11</b>	6.10	3.52	4.23	5.29	4.80	5.59	6.10	4.61	2.57	2.20	4.50	1.38	3.27
	<b>COMP12</b>	90.40	20.64	18.77	15.12	25.16	219.66	179.95	36.20	25.85	24.03	65.58	74.53	0.88

### Interpretation:

From the above table it can be interpreted that the DTR of selected companies reflect a fluctuating trend during the study period with minimum amount of variability. But on an average, the DTR of company 1, company 6, company 8 and company 10 show good performance regarding assets management or average debtors which has been converted into cash during a year. It means to say that the efficiency of above-mentioned company has the ability to collect revenue more efficiently than other company in this row.

Similarly, a higher ratio of FATR implies that management is using its fixed assets more effectively. Higher the ratio greater is the efficiency of generating revenue from its existing fixed assets. Here company 12(Renault India perform really very well of assets management or generating revenue from fixed assets. Beside that company 11(BMW India), company 7(Hyundai Motor I) and company 1(Maruti Suzuki) also managed fixed assets efficiently than the other companies in this row.

Inventory Turnover Ratio (ITR) is also known as the stock turnover ratio, is an efficiency ratio that measures how efficiently a company can managed its inventory. It is a simple ratio that helps to show how effectively inventory can be managed by comparing average inventory and cost of goods sold for a particular period. This enables us to measure how often the average inventory ratio is sold or turned in a particular period. The above table revealed that inventory turnover ratio of company 12 is highest among all the companies with a fluctuating trend during the study period. Similarly, the ITR of company 1 (Maruti Suzuki), company2(Fiat India Automobile), company6 (Honda Cars India), company7(Hyundai Motor I), company10 (Toyota Kirloskar) also maintain a good track with fluctuating trend during the same period. Whereas the others companies like company 3(Ford India), company 4(General Motors India), company 5(Hindustan Motors), company 8(Mahindra Electric), company 9(Skoda Auto Volks), and company 11(BMW India) they are not able to manage its inventory effectively compared to others companies in this time period. These particular companies also show fluctuating trend during the period under study.

## ANOVA Test of Current Ratio

**Table 4: Analysis of variance- Current Ratio of selected Automobile Companies.**

Source of variation	SS	Df	MS	F	P-Value	F Crit.
Between Group	2.664785455	9	0.296087273	1.095605817	0.372974	1.974829198
Within Group	27.02498182	100	0.270249818			
Total		109				

**Source: Author's Computed**

From the above table it is revealed that F-value (1.095605817) is less than F-Critical value (1.974829198) and P-value is 0.372974 which is greater than the alpha level 0.05. As such null hypothesis is accepted. So, it may state that there is no significant difference between the values of CR of the selected firm.

## ANOVA Test of Cash Flow Coverage Ratio

**Table 5: Analysis of variance- Cash Flow Coverage Ratio of selected Automobile Companies.**

Source of variation	SS	Df	MS	F	P-Value	F Crit.
Between Group	20.70945258	9	2.301050286	0.865948578	0.55815	1.974829198
Within Group	265.7259731	100	2.657259731			
Total	286.4354256	109				

**Source: Author's Computed**

From the above table it is revealed that F-value (0.865948578) is less than F-Critical value (1.974829198) and P-value is 0.55815 which is greater than the alpha level 0.05. As such null hypothesis is accepted. So, it may state that there is no significant difference between the values of CFCR of the selected firm.

## ANOVA Test of Current Liability Coverage Ratio

**Table 6: Analysis of variance-Current Liability Coverage Ratio of selected Automobile Companies.**

Source of variation	SS	Df	MS	F	P-Value	F Crit.
<b>Between Group</b>	2.468817227	9	0.274313025	1.017426297	0.431456	1.974829198
<b>Within Group</b>	26.96146405	100	0.26961464			
<b>Total</b>	29.43028127	109				

**Source: Author's Computed**

From the above table it is revealed that F-value (1.017426297) is less than F-Critical value (1.974829198) and P-value is 0.431456 which is greater than the alpha level 0.05. As such null hypothesis is accepted. So, it may state that there is no significant difference between the values of CLCR of the selected firm.

## ANOVA Test of Gross Profit Ratio

**Table 7: Analysis of variance-Gross Profit Ratio of selected Automobile Companies.**

Source of variation	SS	Df	MS	F	P-Value	F Crit.
<b>Between Group</b>	406.3154045	9	45.14615606	1.142196794	0.340725	1.974829198
<b>Within Group</b>	3952.572473	100	39.52572473			
<b>Total</b>	4358.887877	109				

**Source: Author's Computed**

From the above table it is revealed that F-value (1.142196794) is less than F-Critical value (1.974829198) and P-value is 0.340725 which is greater than the alpha level 0.05. As such null hypothesis is accepted. So, it may state that there is no significant difference between the values of GPR of the selected firm.

## ANOVA Test of Debtors Turnover Ratio

**Table 8: Analysis of variance-Debtors Turnover Ratio of selected Automobile Companies.**

Source of variation	SS	Df	MS	F	P-Value	F Crit.
<b>Between Group</b>	57746.01135	9	6416.223483	0.961344083	0.476532	1.974829198
<b>Within Group</b>	667422.1641	100	6674.221641			
<b>Total</b>	725168.1755	109				

**Source: Author's Computed**

From the above table it is revealed that F-value (0.961344083) is less than F-Critical value (1.974829198) and P-value is 0.476532 which is greater than the alpha level 0.05. As such null hypothesis is accepted. So, it may state that there is no significant difference between the values of DTR of the selected firm.

## ANOVA Test of Fixed Assets Turnover Ratio

**Table 8: Analysis of variance-Fixed Assets Turnover Ratio of selected Automobile Companies.**

Source of variation	SS	Df	MS	F	P-Value	F Crit.
<b>Between Group</b>	72.55173182	9	8.061303535	0.51962919	0.857301	1.974829198
<b>Within Group</b>	1551.356945	100	15.51356945			
<b>Total</b>	1623.908677	109				

**Source: Author's Computed**

From the above table it is revealed that F-value (0.51962919) is less than F-Critical value (1.974829198) and P-value is 0.857301 which is greater than the alpha level 0.05. As such null hypothesis is accepted. So, it may state that there is no significant difference between the values of FATR of the selected firm.

## Conclusions:

The present study found that-

- i) 50% of selected companies managed short term liabilities efficiently whereas 50% companies can't able to manage it efficiently, which may result liquidity crunch in future. The debt paying capacities of the selected companies is also not at all satisfactory except Maruti Suzuki. The entire firm is not able to generate enough cash to pay of its immediate obligation. The assets management process is also not satisfactory except Maruti Suzuki and Renault India.
- ii) There are no significant changes has been noticed due to covid-19 outbreak due to gradual decreasing and fluctuating trend of different ratios of this sector during the study period.
- iii) A considerable degree of uniformity among the liquidity, profitability and efficiency of current assets management, efficiency of fixed assets and cash flows management and earning capabilities of the company during the study period was noticed.

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