Project Report

On

"A Study of Working Capital with reference to Tata Motors Limited from 2016-17 to 2021-22"

A report submitted to Rashtrasant Tukadoji Maharaj Nagpur University, in partial fulfillment of the requirements for award of the degree of Bachelor of Business Administration, Specialization in Financial Management

Academic Session 2021-22

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CERTIFICATE

This is to certify that Sakshi Vinchurkar is a bonafide student of Tirpude Institute of Management Education, Nagpur, and is studying Bachelor of Business Administration course (B.B.A) –III year. She has completed her project titled "A Study of Working Capital with reference to Tata Motors Limited from 2016-17 to 2021-22".

This project is submitted to Rashtrasant Tukdoji Maharaj Nagpur University in partial fulfillment of academic requirements for the degree of Bachelor of Business Administration, for the session 2020-21.

I find the work comprehensive, complete and of sufficiently high standard to warrant its presentation.

Dr. Yogesh Gharpure
Guide

Dr. Lalit Khullar
Director

Place: Nagpur

Date:

ACKNOWLEDGEMENT

I take this opportunity to convey my gratitude to those who provided me help during the course of my study.

It is indeed a great pleasure to express my sincere thanks and sense of gratitude to Dr. Yogesh Gharpure for his valuable guidance, timely help and suggestions and constant encouragement during my project work.

I am deeply indebted and grateful to the people who shared their opinion & experience with me in order to bring out this research project successfully one.

There are many who offered me help and support in numerous ways. I wish to express my gratitude to all those who have helped me throughout this research work to complete it successfully.

However, I accept the sole responsibility for any possible errors of omission and commission.

Place - Nagpur
Date -

Sakshi Vinchurkar
BBA - III

DECLARATION

The work presented in this project report titled "A Study of Working Capital with reference to Tata Motors Limited from 2016-17 to 2021-22" has been carried out by me under the guidance of Dr. Yogesh Gharpure during the academic year 2020-21.

I solemnly declare that this work has not been submitted in part or full for other course conducted by Rashtrasant Tukdoji Maharaj Nagpur University or any other University for any other purpose.

Place - Nagpur
Date -

Sakshi Vinchurkar
BBA - III

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Chapter - 1

Introduction to Topic

INTRODUCTION TO WORKING CAPITAL

Working capital is the amount of money a company has available in short-term liquid assets including things like cash, inventory, and unpaid customers invoices, after its current short-term liabilities, like debt payments and invoices due, are paid. It determines a company's immediate liquidity and is often used to manage cash flow and for other forms of financial analysis and assessment.

What Working Capital Is

Working capital is an accounting measure that refers to the amount of liquid assets a company has to deploy over the next 12 months in relation to its short-term financial obligations for the same time period. It indicates whether the pool of money a company has, or expects to receive, over the next year is sufficient to meet the short term obligations it also expects to meet during that time.

Working capital is calculated as part of a company's balance sheet and includes a company's assets and liabilities over the next 12 months. While the equations for calculating working capital are straightforward, most businesses have considerable inflows and outflows of funds, many of which have some degree of uncertainty as to timing. That makes working capital a constantly evolving amount. However, keeping pace with its dynamics is important for those in the leadership and finance departments of a company to ensure that they are effectively utilizing their liquid assets and meeting their obligations.

How much working capital a company needs often depends on the industry and the way things are made, paid for, and sold in that industry. For example, companies in seasonal industries might need more working capital at the beginning of the season since they won't get payments from customers until later in the season. Considerable working capital could also be required by businesses that need to leverage supplier discounts by buying or manufacturing in bulk to keep their margins low. To know how a company is performing this metric, it's important to compare its working capital to the average in its industry.

Components of Working Capital

Current assets and current liabilities are the two main components of working capital:

Current Assets

A company's current assets include all its cash and cash equivalents, prepaid expenses, inventory that is expected to be sold within 12 months, marketable securities, supplies, accounts receivable, and assets it expects it could liquidate within 12 months.

It could also include less common assets like a piece of property a company is readying to sell, or the cash surrender value of life insurance. Current assets represent the amount of liquidity a company has or will have on hand to pay expenses.

Current Liabilities

A company's current liabilities are all the company's obligations that will come due within 12 months of the balance sheet's date. That could include all debt payments due, accounts payable, wages and payroll taxes, invoices, other taxes, customer deposits, deferred revenue, and large purchases.

It could also include less common expenses like bank overdrafts, dividends declared, and judgments against a company. Current liabilities represent the total expenses a company will have to pay in a 12-month period.

To calculate the working capital or liquid funds of business, below mentioned formula can be used: **Working Capital = Current Assets (Net of Depreciation) – Current Liabilities**

Importance of Working Capital

- **Liquidity Management:** By properly analyzing the expenses payable or to be incurred in the near future the financial team of an enterprise would easily plan for their funds accordingly.

- **Out of Cash:** In-appropriate prepared plans of day to day expenses may result in enterprise liquidity issues. They have to postpone or to arrange funds from some other sources which give a bad impression of an enterprise at the party.
- **Helps in Decision Making**: By correctly analyzing the requirement of funds for day to day operations the finance team can appropriately manage the funds and can decide accordingly for available funds and for the availability of funds also.
- **Addition in the Value of Business:** As the management accordingly manages all the day to day required funds that help the authorized personnel to timely pay for all the outstanding creates a value addition or goodwill enhancement in the market.
- **Helps in the Situation of Cash Crunches:** By properly managing the liquid funds one can help the organization not to affect the situation of crises or cash crunches and pay for its day to day expenses on a timely basis.
- **Perfect Investments Plans:** Correctly managing the funds or working capital one can choose or plan for their investments accordingly and invest the funds to maximize the return as per their availability.
- **Helps in Earning Short Term Profits**: Sometimes it is seen that the enterprises keep a heavy amount of funds as working capital which is far over and above the required level of working capital. So by correctly preparing the required working capital those extra funds could be invested for a short span of time and could create value in the profits of the enterprise.
- **Strengthening the Work Culture of Entity**: Timely payment of all the day to day expenses mainly focused on the salary of the employees creates a good environment and a sort of motivation amongst employees to work harder and strengthening the good working environment.
- **Improves Creditworthiness of Entity:** When the enterprise has adequately planned their working capital requirements, they will surely pay the payments to vendors and other creditors timely which improves their creditworthiness which could help them to get the funds as and when required easily.
- **Act as Guarantor to Other Enterprises:** When an enterprise has created such a good image in the market then the business could also help some other enterprises and in favor gets business profits and contracts done easily.

- **Good Reputation of Entity:** Easy way to create a good reputation in the market which in turn helps the organization or entity in easily getting contracts because of a good image and fulfilling their commitments on time. Nowadays, everyone wants to deal and do business with such parties whose market reputation and creditworthiness is good due to an increase in fraud and manipulations.

Different Types of Working Capital

1. Temporary Working Capital

Temporary working capital is the capital required by the business during some specific times of the year. For example, this capital may be required in the festive season owing to the immediate demands of the business. This requirement is considered temporary and changes as per the business' operations and market situations. This also means you just require a short term loan to fund your business and can repay it soon after, when the cash starts rolling in.

2. Permanent Working Capital

The permanent working capital is the amount of money required to make liability payments even before you are able to convert assets or invoices into cash. This is also known as the operating cycle and many businesses require an ongoing, sometimes permanent, solution to fill in this gap. Also known as fixed working capital or hardcore working capital, this is the minimum working capital required to function smoothly.

3. Gross & Net Working Capital

Gross working capital is the total of the company's assets. These assets are basically the ones that can be converted to cash within one year. The assets typically include:

- Cash
- Accounts Receivable
- Marketable Securities like stocks
- Short-Term Investments

The preferred way to express positive working capital is the ratio of current assets to current liabilities. The networking capital of the business is the difference between gross working capital and current liabilities.

4. Negative Working Capital

A shortfall or deficit is known as negative working capital and reflects an excess of current liabilities over current assets. Negative working capital arises when the current liabilities exceed the current assets. In other words, there is more short-term debt compared to short-term assets. In the case of working capital, it could be good as a company with negative working capital funds its growth in sales by effectively borrowing from its suppliers and customers. When managed properly, negative working capital could be a way to fund your business growth in sales with other people's money.

5. Reserve Working Capital

Reserve working capital is a type of fund a business maintains over and above the working capital required. Businesses use such funds as a contingency for unexpected market situations or opportunities. The reserve working capital refers to the short term financial arrangement made by the business units to meet any changes or uncertainties.

6. Regular Working Capital

Regular working capital is the least amount of capital required by a business to carry out its day-to-day business operations. For example, making a monthly payment of salaries and wages and overhead expenses for processing raw materials required for the business. Businesses need to maintain the appropriate level of regular working capital for stable operations.

7. Seasonal Working Capital

This working capital refers to the increased amount of working capital a business requires during the peak season of the year. Businesses that deal in the production or manufacturing of products or provide services that have seasonal demands need to maintain a seasonal working capital. It can be considered as a form of reserve working capital but only to adapt to the sudden change and seasonal fluctuations in the market. Seasonal working capital is considered as that temporary

increase in working capital. It is only applicable to businesses that impact seasons, for example, the manufacturer of raincoats and umbrellas for whom the relevant season is monsoon. Normally, their working capital requirement would increase in that season due to higher demand and sales and then go down as the collection from debtors is more than sales.

8. Special Working Capital

A special working capital loan is a rise in the temporary working capital that occurs due to a special event that normally does not occur. It has no basis to forecast and has rare occurrences normally. For example, award functions take place once every year, and such events require a large amount of working capital to cover the expenses successfully. A special working capital loan is the ideal way to cover the complete cost of such events. Although big companies and businesses can avail collateral loans, mostly small businesses cannot afford to pledge collateral.

Advantages of Working Capital

- **Helps in Running Business Smoothly**

The biggest advantage of this capital is that it helps the company in running the business effectively and smoothly because imagine a situation where the company does not have working capital than it won't be able to pay the salaries of the employees, pay to the suppliers for the raw material or pay regular administrative expenses on time leading to complete breakdown as without men, machine and raw material a company is like body without any soul.

- **Goodwill of the company**

  It also helps in maintaining the goodwill of the company because if outside parties like creditors, suppliers, employees come to know about the companies poor working capital they will not be interested in working with company and it will turn into a vicious cycle because less working capital would mean less business which in turn will lead to even lesser working capital.

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- **Helps in Bargaining**

In business cash is king and a company which has enough working capital can bargain and get things on its terms rather than others dictating the terms to the company. Hence for example, if the company goes for purchasing raw material from suppliers than 99 percent of the time if the company is willing to pay them in advance they will be willing to offer a discount the as opposed to those companies who take raw materials on credit.

Chapter - 2

Introduction to Industry

In 2020, India was the fifth-largest auto market, with ~3.49 million units combined sold in the passenger and commercial vehicles categories. It was the seventh-largest manufacturer of commercial vehicles in 2019.

The two wheelers segment dominates the market in terms of volume owing to a growing middle class and a young population. Moreover, the growing interest of the companies in exploring the rural markets further aided the growth of the sector.

India is also a prominent auto exporter and has strong export growth expectations for the near future. In addition, several initiatives by the Government of India and major automobile players in the Indian market is expected to make India a leader in the two-wheeler and four-wheeler market in the world by 2020.

Market Size

Domestic automobiles production increased at 2.36% CAGR between FY16-20 with 26.36 million vehicles being manufactured in the country in FY20. Overall, domestic automobiles sales increased at 1.29% CAGR between FY16-FY20 with 21.55 million vehicles being sold in FY20.

In FY21, the total passenger vehicles production reached 22,652,108.
In October 2021, the total production volume of passenger vehicles (except for BMW, Mercedes, Tata Motors & Volvo Auto), three wheelers, two wheelers and quadricycles reached 2,214,745 units.

Two wheelers and passenger vehicles dominate the domestic Indian auto market. Passenger car sales are dominated by small and mid-sized cars. Two wheelers and passenger cars accounted for 80.8% and 12.9% market share, respectively, accounting for a combined sale of over 20.1 million vehicles in FY20.

In July-September 2021 quarter, the luxury car market registered sales of 8,500 units.

Overall, automobile export reached 4.77 million vehicles in FY20, growing at a CAGR of 6.94% during FY16-FY20. Two wheelers made up 73.9% of the vehicles exported, followed by passenger vehicles at 14.2%, three wheelers at 10.5% and commercial vehicles at 1.3%.
Indian automobile exports stood at 1,419,430 units from April 2021 to June 2021 as compared to 436,500 units in April 2020 to June 2020.
EV sales, excluding E-rickshaws, in India witnessed a growth of 20% and reached 1.56 lakhs units in FY20 driven by two wheelers. According to NITI Aayog and Rocky Mountain Institute (RMI) India's EV finance industry is likely to reach Rs. 3.7 lakhs crore (US$ 50 billion) in 2030. A report by India Energy Storage Alliance estimated that EV market in India is likely to increase at a CAGR of 36% until 2026. In addition, projection for EV battery market is forecast to expand at a CAGR of 30% during the same period.

Premium motorbike sales in India recorded seven-fold jump in domestic sales, reaching 13,982 units during April-September 2019. The luxury car market is expected to register sales of 28,000-33,000 units in 2021, up from 20,000-21,000 units sold in 2020. The entry of new manufacturers and new launches is likely to propel this market in 2021.

Investments

To keep up with the growing demand, several auto makers have started investing heavily in various segments of the industry during the last few months. The industry attracted Foreign Direct Investment (FDI) worth US$ 30.51 billion between April 2000 and June 2021 accounting for ~5.5% of the total FDI during the period according to the data released by Department for Promotion of Industry and Internal Trade (DPIIT).
Some of the recent/planned investments and developments in the automobile sector in India are as follows:

In November 2021, Indian Oil Corporation (IOC) and two other public sector oil firms announced that they will install 22,000 electric vehicle (EV) charging stations over the next 3–5 years.

In November 2021, Tata Motors announced that they will establish vehicle scrap page centres under a franchise set up at Ahmedabad, Gujarat, by the first quarter of the next fiscal year.

In November 2021, Skoda Auto announced plans to locally manufacture electric cars in India. However, the firm may bring its first EV, the Enyaq, through the CBU route, before committing to local manufacturing.

In November 2021, Hero Motor (HMC), the parent company of Hero Cycles, entered a joint venture partnership with Yamaha, a Japanese two-wheeler major, to make electric motors for e-bicycles for the global market.

In October 2021, Tata Motors announced that private equity group TPG along with ADQ of Abu Dhabi has agreed to invest Rs. 7,500 crore (US$ 1 billion) in its EV division.

In September 2021, Hero Electric announced plans to expand production capacity at its facility in Ludhiana, Punjab, to >5 lakhs units by March 2022, up from the existing capacity of 1 lakh units per year.

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In August 2021, Hindustan Zinc Ltd. announced a US$ 1 billion investment across its eight mines to replace diesel-powered trucks and equipment with battery EVs.

In July 2021, Maruti Suzuki India announced a Rs. 18,000 crore (US$ 2.42 billion) investment in a new manufacturing facility in Haryana, with an installed capacity of 7.5-10 lakhs units per annum. As it prepares to protect its market dominance, the company aims to increase capital spending by 67% to Rs. 4,500 (US$ 605 million) crore in FY22.

In July 2021, Hyundai Motor India opened its new corporate headquarters in Gurgaon, backed by a Rs. 2,000 crore (US$ 269 million) investment.

In April 2021, Mahindra & Mahindra announced a three-year investment plan in the electric vehicles segment of Rs. 3,000 crore (US$ 403 million).

Between January and July 2021, EV component makers, electric commercial vehicles and last-mile delivery companies invested a total of Rs. 25,045 crore (US$ 3.67 billion) on electric vehicles.

In FY21, passenger vehicles sales reached 27.11 lakhs units, two-wheelers reached 151.19 lakhs units, commercial vehicles sales reached 5.69 lakhs units and for three-wheelers it was 2.16 lakhs units.

In 2019-20, the total passenger vehicles sales reached ~2.8 million, while ~2.7 million units were sold in FY21.

In February 2021, the Delhi government started the process to set up 100 vehicle battery charging points across the state to push adoption of electric vehicles.

In January 2021, Fiat Chrysler Automobiles (FCA) announced an investment of US$ 250 million to expand its local product line-up in India.

A cumulative investment of ~Rs. 12.5 trillion (US$180 billion) in vehicle production and charging infrastructure would be required until 2030 to meet India's electric vehicle (EV) ambitions.

In January 2021, Lamborghini announced it is aiming to achieve sales in India higher than the 2019-levels, after recovering from pandemic-induced disruptions.

In January 2021, Tesla, the electric car maker, set up a R&D centre in Bengaluru and registered its subsidiary as Tesla India Motors and Energy Private Limited.

Government Initiatives

The Government of India encourages foreign investment in the automobile sector and has allowed 100% foreign direct investment (FDI) under the automatic route.
Some of the recent initiatives taken by the Government of India are -

In November 2021, the union government added >100 advanced technologies, including alternate fuel systems such as compressed natural gas (CNG), Bharat Stage VI compliant flex fuel engines, electronic control units (ECU) for safety, advanced driver assist systems and e-quadricycles, under the production-linked incentive (PLI) scheme for the automobiles.

In September 2021, the Union Minister for Road, Transport and Highways, Mr. Nitin Gadkari announced that government is planning to make it mandatory for car manufacturers to produce flex-fuel engines after getting the required permissions from the Supreme Court of India.

In September 2021, the Indian government issued notification regarding a PLI scheme for automobile and auto components worth Rs. 25,938 crore (US$ 3.49 billion). This scheme is expected to bring investments of over Rs. 42,500 (US$ 5.74 billion) by 2026.

The Indian government has planned ~US$ 3.5 billion in incentives over a five-year period until 2026 under a revamped scheme to encourage production and export of clean technology vehicles.

As of June 2021, Rs. 871 crore (US$ 117 million) has been spent under the FAME-II scheme, 87,659 electric vehicles have been supported through incentives and 6,265 electric buses have been sanctioned to various state/city transportation undertakings.

In July 2021, India inaugurated the national automotive test tracks (NATRAX), which is Asia's longest high-speed track to facilitate automotive testing.

In Union Budget 2021-22, the government introduced the voluntary vehicle scrap page policy, which is likely to boost demand for new vehicles after removing old unfit vehicles currently plying on the Indian roads.

In February 2021, the Delhi government started the process to set up 100 vehicle battery charging points across the state to push adoption of electric vehicles.

The Union Cabinet outlaid Rs. 57,042 crore (US$ 7.81 billion) for automobiles & auto components sector in production-linked incentive (PLI) scheme under the Department of Heavy Industries.

The Government aims to develop India as a global manufacturing centre and a Research and Development (R&D) hub.

Under NATRiP, the Government of India is planning to set up R&D centres at a total cost of US$ 388.5 million to enable the industry to be on par with global standards.

The Ministry of Heavy Industries, Government of India has shortlisted 11 cities in the country for introduction of EVs in their public transport systems under the FAME (Faster Adoption and Manufacturing of (Hybrid) and Electric Vehicles in India) scheme. The Government will also set up incubation centre for start-ups working in the EVs space.

In February 2019, the Government of India approved FAME-II scheme with a fund requirement of Rs. 10,000 crore (US$ 1.39 billion) for FY20-22.

Achievements

Following are the achievements of the Indian automotive sector:

In H12019, automobile manufacturers invested US$ 501 million in India's auto-tech start-ups according to Venture intelligence.

Investment flow into EV start-ups in 2019 (till end of November) increased nearly 170% to reach US$ 397 million.

On 29th July 2019, Inter-ministerial panel sanctioned 5,645 electric buses for 65 cities.

NATRiP's proposal for "Grant-In-Aid for test facility infrastructure for EV performance Certification from NATRIP Implementation Society" under the FAME Scheme was approved by Project Implementation and Sanctioning Committee (PISC) on 3rd January 2019.

Under NATRiP, following testing and research centres have been established in the country since 2015.

- International Centre for Automotive Technology (ICAT), Manesar
- National Institute for Automotive Inspection, Maintenance & Training (NIAIMT), Silchar
- National Automotive Testing Tracks (NATRAX), Indore
- Automotive Research Association of India (ARAI), Pune
- Global Automotive Research Centre (GARC), Chennai

SAMARTH Udyog - Industry 4.0 centres: 'Demo cum experience' centres are being set up in the country for promoting smart and advanced manufacturing helping SMEs to implement Industry 4.0 (automation and data exchange in manufacturing technology).

Road Ahead

The automobile industry is supported by various factors such as availability of skilled labour at low cost, robust R&D centres, and low-cost steel production. The industry also provides great opportunities for investment and direct and indirect employment to skilled and unskilled labour. Indian automotive industry (including component manufacturing) is expected to reach Rs. 16.16-18.18 trillion (US$ 251.4-282.8 billion) by 2026.

Chapter - 3

Company Profile

COMPANY PROFILE

Tata Motors Limited is an Indian multinational automotive manufacturing company, headquartered in the city of Mumbai, India which is part of Tata Group. The company was founded in 1945 as a manufacturer of locomotives. Tata Motors has auto manufacturing and vehicle plants in Jamshedpur, Pantnagar, Lucknow, Sanand, Dharwad, and Pune in India, as well as in Argentina, South Africa, the United Kingdom, and Thailand.

The company produces passenger cars, trucks, vans, coaches, buses, luxury cars, sports cars, equipment. Tata Motors Group (Tata Motors) is a $34 billion organization. It is a leading global automobile manufacturing company. Its diverse portfolio includes an extensive range of cars, sports utility vehicles, trucks, buses and defence vehicles. Tata Motors is one of India's largest OEMs offering an extensive range of integrated, smart and e-mobility solutions

Part of the USD110 billion Tata group founded by Jamsetji Tata in 1868, Tata Motors is among the world's leading manufacturers of automobiles. We believe in 'Connecting aspirations', by offering innovative mobility solutions that are in line with customers' aspirations. We are India's largest automobile manufacturer, and we continue to take the lead in shaping the Indian commercial vehicle landscape, with the introduction of leading-edge power trains and electric solutions packaged for power performances and user comfort at the lowest life-cycle costs. Our new passenger cars and utility vehicles are based on Impact Design and offer a superior blend of performance, driveability and connectivity.

Our focus on connecting aspirations and our pipeline of tech-enabled products keeps us at the forefront of the market. We have identified six key mobility drivers that will lead us into the future – modular architecture, complexity reduction in manufacturing, connected & autonomous vehicles, clean drivelines, shared mobility, and low total cost of ownership. Our sub-brand TAMO is an incubating centre of innovation that will spark new mobility solutions through new technologies, business models and partnerships.

Our mission - across our globally dispersed organization – is to be passionate in anticipating and providing the best vehicles and experiences that excite our global customers

VISION

By FY 2024, we will become the most aspirational Indian auto brand, consistently winning, by

- Delivering superior financial returns
- Driving sustainable mobility solutions
- Creating a highly engaged work force

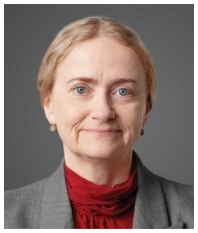
CURRENT BOARD OF DIRECTORS



Mr. Natarajan Chandrasekaran
Non-Executive, Independent Director



Mr. O P Bhatt
Non-Executive, Independent Director



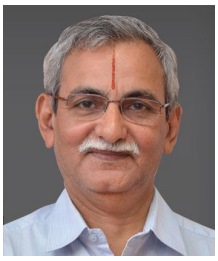
Ms. Hanne Sorensen
Non-Executive Director and Chairman



Ms. Vedika
Non-Executive, Independent Director



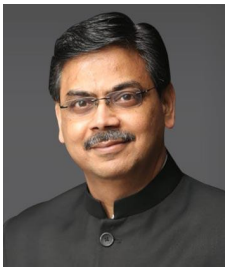
Bhandarkar Mr. Mitsuhiko Yamashita
Non-Executive, Non-Independent Director



Mr. Kosaraju Veerayya Chowdary
Non-Executive, Independent Director



Mr. Thierry Bolloré
Non-Executive Director



Mr. Girish Wagh
Executive Director

Chapter - 4

Objectives of Study

OBJECTIVES OF STUDY

1. To understand the concept of working capital.
2. To identify the factors affecting working capital.
3. To calculate various ratios related to working capital.
4. To find out the impact of changes in working capital on profitability of the company.

Chapter - 5

Research Methodology

RESEARCH METHODOLOGY

Research is defined as careful consideration of study regarding a particular concern or problem using scientific methods. According to the American sociologist Earl Robert Babbie, “research is a systematic inquiry to describe, explain, predict, and control the observed phenomenon. It involves inductive and deductive methods.”

- Types of research:

Various methods and techniques used to present the research beautifully is called research methodology. The procedures enhance the research process and it exposes the way research is carried out. It helps to explain the methods used in research and presents the idea to the audience in an elegant manner that depends mainly on the researcher. Various methods are used in the research to explain the ideas and we will see the types in this article. However, the selection of the method purely depends on the researcher and the type does not adhere to any requirements.

1. Quantitative Research: As the name suggests, quantitative refers to the numbers where data is collected based on numbers, and a summary is taken from these numbers. Graphs help to quantify the results in quantitative research.

2. Qualitative Research: Qualitative refers to the non- numerical elements in the research. When the information or data cannot be grasped in terms of numbers, qualitative research comes for the rescue.

3. Descriptive Research***:*** Facts are considered in descriptive methods and surveys and case studies are done to clarify the facts. These help to determine and explain with examples, the facts, and they are not rejected. Many variables can be used in descriptive research to explain the facts.

4. Analytical Research: Analytical research uses the facts that have been confirmed already to form the basis for the research and critical evaluation of the material is carried out in this method. Analytical methods make use of quantitative methods as well.

5. Applied Research: Applied research is action research where only one domain is considered and mostly the facts are generalized. Variables are considered constant and forecasting is done so that the methods can be found out easily in applied research.

6. Fundamental Research: Fundamental research is the basic or pure research done to find out an element or a theory that has never been in the world yet. Several domains are connected and the aim is to find out how traditional things can be changed or something new can be developed.

7. Exploratory Research: Exploratory studies are based on the theories and their explanation and it does not provide any conclusion for the research topic. The structure is not proper and the methods offer a flexible and investigative approach for the study.

8. Conclusive Research: Conclusive Research aims at providing an answer to the research topic and has a proper design in the methodology. A well-designed structure helps in formulating and solving the hypotheses and gives the results.

9. Surveys: Not least considered, but *Surveys* play a main role in the research methodology. It helps to collect a vast amount of real-time data and helps in the research process. It is done at a low cost and can be done faster than any other method. Surveys can be done in both quantitative and qualitative methods.

10. Case Studies: Case studies are another method of research methodology where different cases are considered and the proper one for the research is selected. Case studies help to form an idea of the research and helps in the foundation of the research.

Data Collection:

Data is a collection of facts, figures, objects, symbols, and events gathered from different sources. Organizations collect data to make better decisions. Without data, it would be difficult for organizations to make appropriate decisions, and so data is collected at various points in time from different audiences.

Primary Data Collection Methods

Primary data is collected from the first-hand experience and is not used in the past. The data gathered by primary data collection methods are specific to the research's motive and highly

accurate. Primary data collection methods can be divided into two categories: quantitative methods and qualitative methods..

Secondary Data Collection Methods

Secondary data is the data that has been used in the past. The researcher can obtain data from the sources, both internal and external, to the organization.

Internal sources of secondary data:

- Organization's health and safety records
- Mission and vision statements
- Financial Statements
- Magazines
- Sales Report
- CRM Software
- Executive summaries

External sources of secondary data:

- Government reports
- Press releases
- Business journals
- Libraries
- Internet

The secondary data collection methods, too, can involve both quantitative and qualitative techniques. Secondary data is easily available and hence, less time-consuming and expensive as compared to the primary data. However, with the secondary data collection methods, the authenticity of the data gathered cannot be verified.

Data Collection for the project:

The researcher has used secondary data related to working capital information of the company.

Chapter - 6

Data Analysis and Interpretation

DATA ANALYSIS AND INTERPRETATION

BALANCE SHEET OF TATA MOTORS (in Rs. Cr.)	Mar-21	Mar-20	Mar-19	Mar-18	Mar-17
	12 mths	12 mths	12 mths	12 mths	12 mths
EQUITIES AND LIABILITIES					
SHAREHOLDER'S FUNDS					
Equity Share Capital	765.81	719.54	679.22	679.22	679.22
TOTAL SHARE CAPITAL	765.81	719.54	679.22	679.22	679.22
Reserves and Surplus	18,290.16	16,800.61	21,483.30	19,491.76	20,483.39
TOTAL RESERVES AND SURPLUS	18,290.16	16,800.61	21,483.30	19,491.76	20,483.39
TOTAL SHAREHOLDERS FUNDS	19,055.97	18,387.65	22,162.52	20,170.98	21,162.61
NON-CURRENT LIABILITIES					
Long Term Borrowings	16,326.77	14,776.51	13,914.74	13,155.91	13,686.09
Deferred Tax Liabilities [Net]	266.5	198.59	205.86	154.61	147.58
Other Long Term Liabilities	1,786.93	1,646.56	404.11	502.37	1,451.47
Long Term Provisions	1,371.94	1,769.74	1,281.59	1,009.48	892.18
TOTAL NON-CURRENT LIABILITIES	19,752.14	18,391.40	15,806.30	14,822.37	16,177.32
CURRENT LIABILITIES					
Short Term Borrowings	2,542.50	6,121.36	3,617.72	3,099.87	5,158.52
Trade Payables	8,115.01	8,102.25	10,408.83	14,225.63	11,462.24
Other Current Liabilities	14,550.50	10,180.46	7,765.57	6,030.53	4,440.42
Short Term Provisions	1,043.54	1,406.75	1,148.69	862.92	477.17
TOTAL CURRENT LIABILITIES	26,251.55	25,810.82	22,940.81	24,218.95	21,538.35
TOTAL CAPITAL AND LIABILITIES	65,059.66	62,589.87	60,909.63	59,212.30	58,878.28
ASSETS					
NON-CURRENT ASSETS					
Tangible Assets	19,922.06	19,540.25	18,316.61	18,192.52	17,897.13
Intangible Assets	6,501.04	5,667.73	3,970.22	3,411.23	2,875.80
Capital Work-In-Progress	1,400.82	1,755.51	2,146.96	1,371.45	1,902.61
Other Assets	0	0	0	0	0
FIXED ASSETS	29,429.56	29,702.78	28,573.42	26,800.35	28,043.92
Non-Current Investments	16,114.91	15,730.86	15,434.19	14,260.79	14,858.39
Deferred Tax Assets [Net]	0	0	0	0	0
Long Term Loans And Advances	126.05	138.46	143.13	143.96	391.46
Other Non-Current Assets	3,534.55	3,449.01	3,529.59	3,035.54	2,827.44
TOTAL NON-CURRENT ASSETS	49,205.07	49,021.11	47,680.33	44,240.64	46,121.21
CURRENT ASSETS					
Current Investments	1,578.26	885.31	1,433.18	2,502.78	2,437.42

Inventories	4,551.71	3,831.92	4,662.00	5,670.13	5,553.01
Trade Receivables	2,087.51	1,978.06	3,250.64	3,479.81	2,128.00
Cash And Cash Equivalents	4,318.94	3,532.19	1,306.61	795.42	326.61
Short Term Loans And Advances	185.42	232.14	200.08	140.27	215.96
OtherCurrentAssets	3,132.75	3,109.14	2,376.79	2,383.25	2,096.07
TOTAL CURRENT ASSETS	15,854.59	13,568.76	13,229.30	14,971.66	12,757.07
TOTAL ASSETS	65,059.66	62,589.87	60,909.63	59,212.30	58,878.28
OTHER ADDITIONAL INFORMATION					
CONTINGENT LIABILITIES, COMMITMENTS					
Contingent Liabilities	5,354.18	4,737.19	7,246.04	5,269.63	4,787.17
CIF VALUE OF IMPORTS					
Raw Materials	0	0	0	0	0
Stores, Spares And Loose Tools	0	0	0	0	0
Trade/Other Goods	0	0	0	0	0
Capital Goods	0	0	0	0	0
EXPENDITURE IN FOREIGN EXCHANGE					
Expenditure In Foreign Currency	2,159.77	2,946.64	0	3,079.76	0
REMITTANCES IN FOREIGN CURRENCIES FOR DIVIDENDS					
Dividend Remittance In Foreign Currency	--	--	--	--	--
EARNINGS IN FOREIGN EXCHANGE					
FOB Value Of Goods	--	--	--	--	--
Other Earnings	2,181.66	3,144.88	--	5,422.47	--
BONUS DETAILS					
Bonus Equity Share Capital	111.29	111.29	111.29	111.29	111.29
NON-CURRENT INVESTMENTS					
Non-Current Investments Quoted Market Value	446.23	140.96	270.17	--	218.18
Non-Current Investments Unquoted Book Value	521.42	407.61	393.21	310.19	310.19
CURRENT INVESTMENTS					
Current Investments Quoted Market Value	--	--	0.91	303.84	--
Current Investments Unquoted Book Value	1,578.26	885.31	1,174.46	1,517.03	2,437.42

Tata Motors

Key Financial Ratios — in Rs. Cr.

	Mar '21	Mar '20	Mar '19	Mar '18	Mar '17
Investment Valuation Ratios					
Face Value	2	2	2	2	2
Dividend Per Share	--	--	--	--	--
Operating Profit Per Share (Rs)	3.9	-1.81	14.55	9.74	4.74
Net Operating Profit Per Share (Rs)	122.84	122.11	203.79	173.24	130.5
Free Reserves Per Share (Rs)	--	--	--	--	--
Bonus in Equity Capital	14.53	15.46	16.38	16.38	16.38
Profitability Ratios					
Operating Profit Margin(%)	3.17	-1.48	7.13	5.62	3.63
Profit Before Interest And Tax Margin(%)	-4.57	-8.88	2.56	0.34	-3.14
Gross Profit Margin(%)	-4.65	-9.16	2.66	0.35	-3.21
Cash Profit Margin(%)	-0.22	-3.09	7.41	5.02	2.08
Adjusted Cash Margin(%)	-0.22	-3.09	7.41	5.02	2.08
Net Profit Margin(%)	-5.09	-16.59	2.91	-1.75	-5.48
Adjusted Net Profit Margin(%)	-5	-16.08	2.81	-1.71	-5.36
Return On Capital Employed(%)	-3.54	-6.72	11.07	4.84	-1.11
Return On Net Worth(%)	-12.57	-41.6	9.11	-5.13	-11.48
Adjusted Return on Net Worth(%)	-19.87	-27.27	10.03	-0.33	-9.88
Return on Assets Excluding Revaluations	49.77	48.7	65.26	59.4	62.32
Return on Assets Including Revaluations	49.77	48.7	65.26	59.4	62.32
Return on Long Term Funds(%)	-3.8	-8.18	12.18	5.29	-1.27
Liquidity And Solvency Ratios					
Current Ratio	0.56	0.46	0.54	0.57	0.53
Quick Ratio	0.49	0.53	0.51	0.44	0.42
Debt Equity Ratio	0.99	1.19	0.79	0.81	0.89
Long Term Debt Equity Ratio	0.86	0.84	0.63	0.65	0.65
Debt Coverage Ratios					
Interest Cover	-0.57	-1.34	2.45	1.01	-0.28
Total Debt to Owners Fund	0.99	1.19	0.79	0.81	0.89
Financial Charges Coverage Ratio	0.99	0.37	4.18	2.79	1.65
Financial Charges Coverage Ratio Post Tax	1.55	-0.98	3.85	2.18	1.39
Management Efficiency Ratios					
Inventory Turnover Ratio	10.33	11.46	14.84	10.52	8.83

Debtors Turnover Ratio	23.14	16.8	20.56	20.98	21.24
Investments Turnover Ratio	1.24	1.14	1.74	10.52	8.83
Fixed Assets Turnover Ratio	1.12	1.07	1.86	1.65	1.3
Total Assets Turnover Ratio	1.5	1.31	1.94	1.78	1.19
Asset Turnover Ratio	1.22	1.11	1.82	1.54	1.14
Average Raw Material Holding	--	--	--	--	--
Average Finished Goods Held	--	--	--	--	--
Number of Days In Working Capital	-121.03	-111.25	-60.37	-76.91	-83.22
Profit & Loss Account Ratios					
Material Cost Composition	76.37	73.55	73.82	72.21	72.77
Imported Composition of Raw Materials Consumed	--	--	--	--	--
Selling Distribution Cost Composition	0.94	1.92	1.06	1.22	1.91
Expenses as Composition of Total Sales	4.63	7.15	--	9.21	--
Cash Flow Indicator Ratios					
Dividend Payout Ratio Net Profit	--	--	--	--	--
Dividend Payout Ratio Cash Profit	--	--	--	--	--
Earning Retention Ratio	100	100	100	100	100
Cash Earning Retention Ratio	--	--	100	100	100
Adjusted Cash Flow Times	--	--	3.29	5.36	19.92

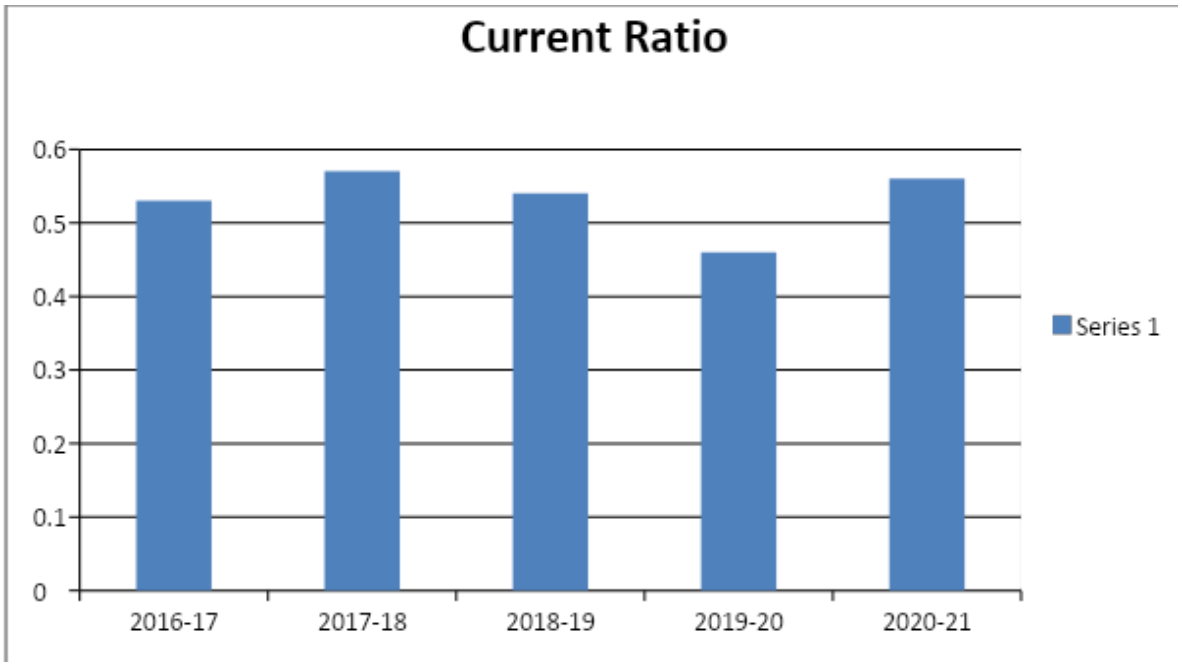
Tata Motors					
Standalone Profit & Loss account					**Rs in Cr**
	Mar 21	**Mar-20**	**Mar-19**	**Mar-18**	**Mar-17**
	12 mths	12 mths	12 mths	12 mths	12 mths
INCOME					
Revenue From Operations [Gross]	**46,559.39**	**43,485.76**	**68,764.88**	**58,234.33**	**48,078.77**
Less: Excise/Service Tax/Other Levies	0	0	0	793.28	4,738.15
Revenue From Operations [Net]	**46,559.39**	**43,485.76**	**68,764.88**	**57,441.05**	**43,340.62**
Other Operating Revenues	472.08	442.41	437.88	1,390.36	975.72
Total Operating Revenues	**47,031.47**	**43,928.17**	**69,202.76**	**58,831.41**	**44,316.34**
Other Income	842.96	1,383.05	2,554.66	1,557.60	981.06
Total Revenue	**47,874.43**	**45,311.22**	**71,757.42**	**60,389.01**	**45,297.40**
EXPENSES					
Cost Of Materials Consumed	30,010.61	26,171.85	43,748.77	37,080.45	27,651.65
Purchase Of Stock-In Trade	5,490.67	5,679.98	6,722.32	4,762.41	3,945.97
Operating And Direct Expenses	907.64	830.24	571.76	474.98	454.48
Changes In Inventories Of FG,WIP And Stock-In Trade	-69.02	722.68	144.69	842.05	-252.14
Employee Benefit Expenses	4,212.99	4,384.31	4,273.10	3,966.73	3,764.35
Finance Costs	2,358.54	1,973.00	1,793.57	1,744.43	1,569.01
Depreciation And Amortisation Expenses	3,681.61	3,375.29	3,098.64	3,101.89	3,037.12
Other Expenses	5,803.57	7,959.75	9,895.68	9,251.41	8,083.12
Less: Amounts Transfer To Capital Accounts	817.53	1,169.46	1,093.11	855.08	941.6
Total Expenses	**51,579.08**	**49,927.64**	**69,155.42**	**60,369.27**	**47,311.96**
	Mar-21	**Mar-20**	**Mar-19**	**Mar-18**	**Mar-17**
	12 mths	12 mths	12 mths	12 mths	12 mths
Profit/Loss Before Exceptional, Extraordinary Items And Tax	**-3,704.65**	**-4,616.42**	**2,602.00**	**19.74**	**-2,014.56**
Exceptional Items	1,392.08	-2,510.92	-203.07	-966.66	-338.71
Profit/Loss Before Tax	**-2,312.57**	**-7,127.34**	**2,398.93**	**-946.92**	**-2,353.27**
Tax Expenses-Continued Operations					
Current Tax	82.31	33.05	294.66	92.63	57.06
Deferred Tax	0.56	129.24	83.67	-4.7	19.27
Total Tax Expenses	**82.87**	**162.29**	**378.33**	**87.93**	**76.33**
Profit/Loss After Tax And Before Extraordinary Items	**-2,395.44**	**-7,289.63**	**2,020.60**	**-1,034.85**	**-2,429.60**
Profit/Loss From Continuing Operations	**-2,395.44**	**-7,289.63**	**2,020.60**	**-1,034.85**	**-2,429.60**
Profit/Loss For The Period	**-2,395.44**	**-7,289.63**	**2,020.60**	**-1,034.85**	**-2,429.60**

	Mar-21	Mar-20	Mar-19	Mar-18	Mar-17
	12 mths	12 mths	12 mths	12 mths	12 mths
OTHER ADDITIONAL INFORMATION					
EARNINGS PER SHARE					
Basic EPS (Rs.)	-6.59	-21.06	5.94	-3.05	-7.15
Diluted EPS (Rs.)	-6.59	-21.06	5.94	-3.05	-7.15
VALUE OF IMPORTED AND INDIGENIOUS RAW MATERIALS					
STORES, SPARES AND LOOSE TOOLS					
DIVIDEND AND DIVIDEND PERCENTAGE					
Equity Share Dividend	0	0	0	0	73

CURRENT RATIO

Current ratio = current assets / current liabilities

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Current Assets	0.53	0.57	0.54	0.46	0.56



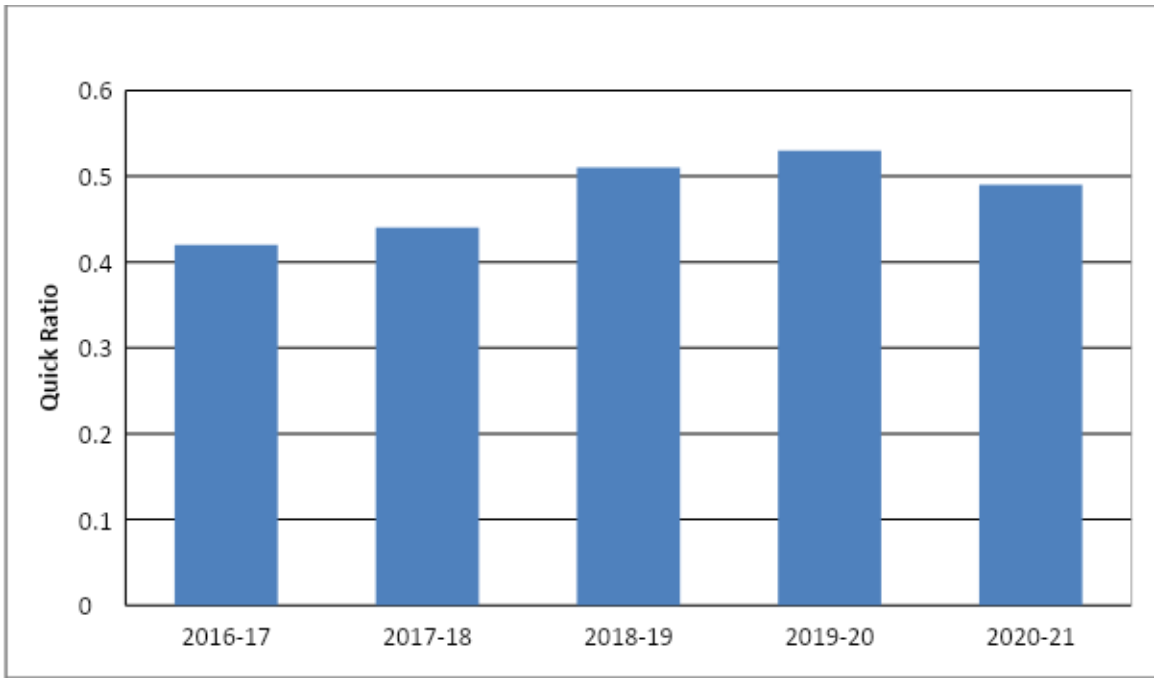
Interpretation:

During the year 2016-17 the value of current ratio was 0.53 which slightly improved to 0.57 in the next year, which is highest among all the five years. Further it reduced to 0.54 and 0.46 in FY 2018-19 and 2019-20 respectively. At the end of financial year 2020-21 the value of current ratio has increased to 0.56.

QUICK RATIO

Quick Ratio = Liquid assets / current liabilities

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Values of Quick Ratio	0.42	0.44	0.51	0.53	0.49



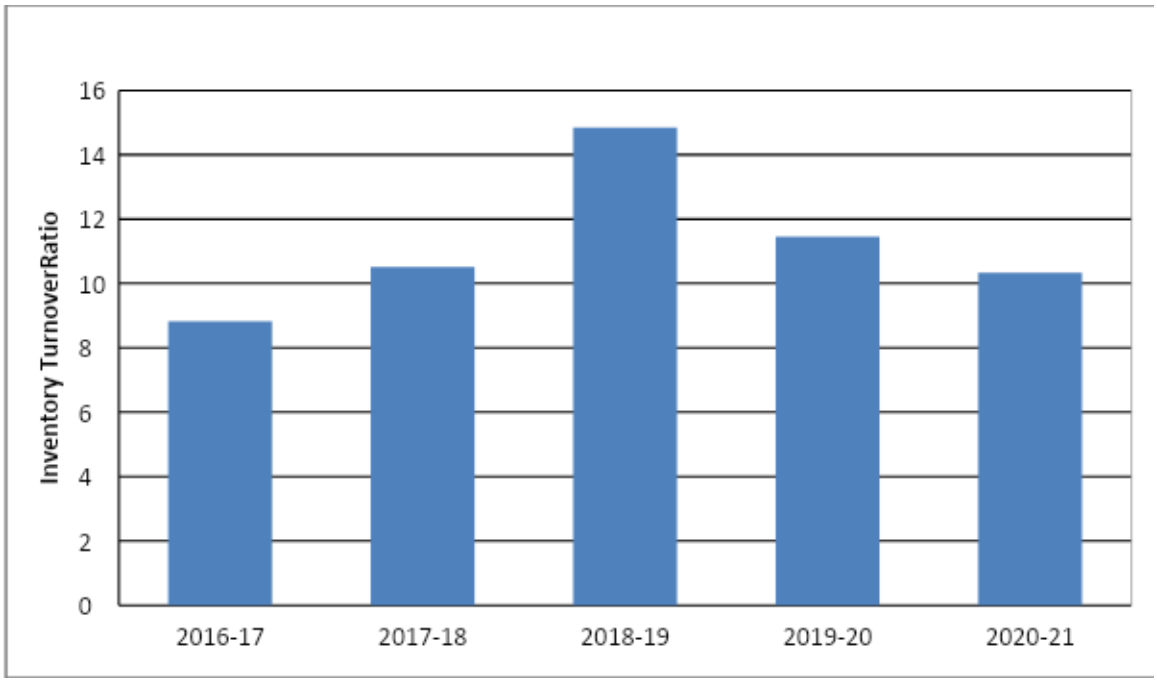
Interpretation:

During the year 2016-17 the value of quick ratio was 0.42 which is slightly improved to 0.44 in the next year. Further it increased to 0.51 to 0.53 in FY 2018-19 to 2019-20 respectively. At the end of the year 2020-21 the value of quick ratio has reduced to 0.49.

INVENTORY TURNOVER RATIO

Inventory Turnover Ratio = Cost of goods sold / average inventories

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Values of Inventory Turnover Ratio	8.83	10.52	14.84	11.46	10.33



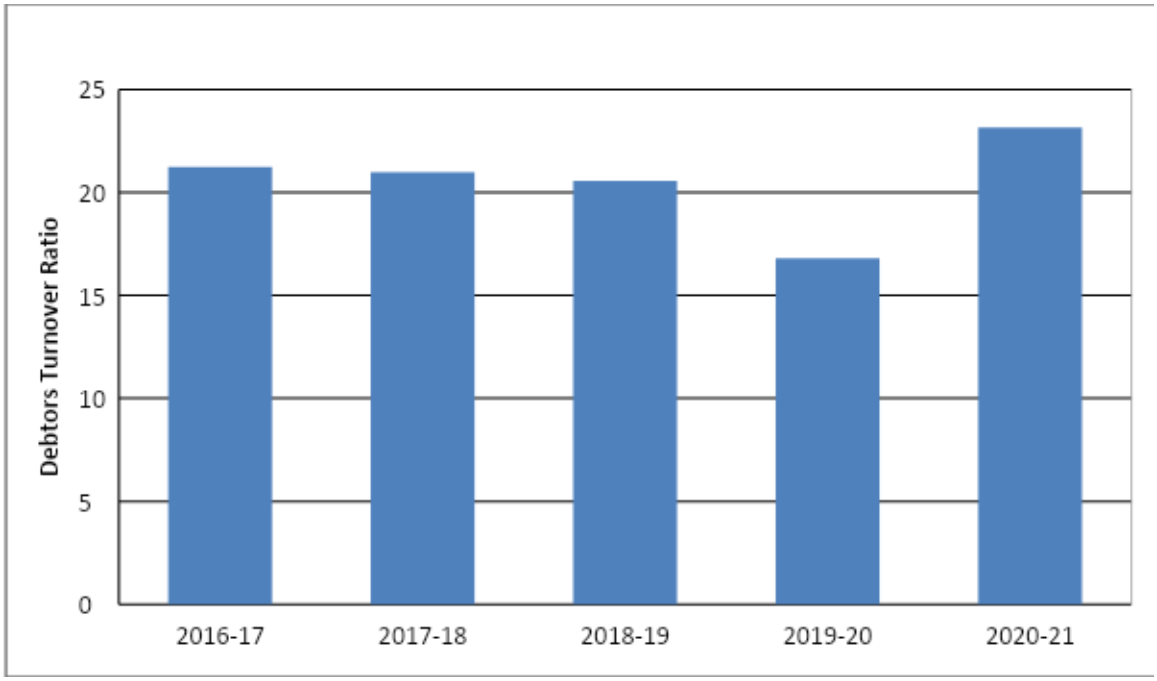
Interpretation:

During the year 2016-17 the value of inventory ratio was 8.83 which slightly improved to 10.52 in the next year. Further it increased to 14.84 in FY 2018-19, highest among all the years. In the year 2019-20 the ratio reduced to 11.46. At the end of the year 2020-21 the value of inventory turnover ratio has decreased to 10.33.

DEBTORS TURNOVER RATIO

Debtors turnover ratio = Net Credit Sales/Average Account Receivable.

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Values of Debtors Turnover Ratio	21.24	20.98	20.56	16.8	23.14



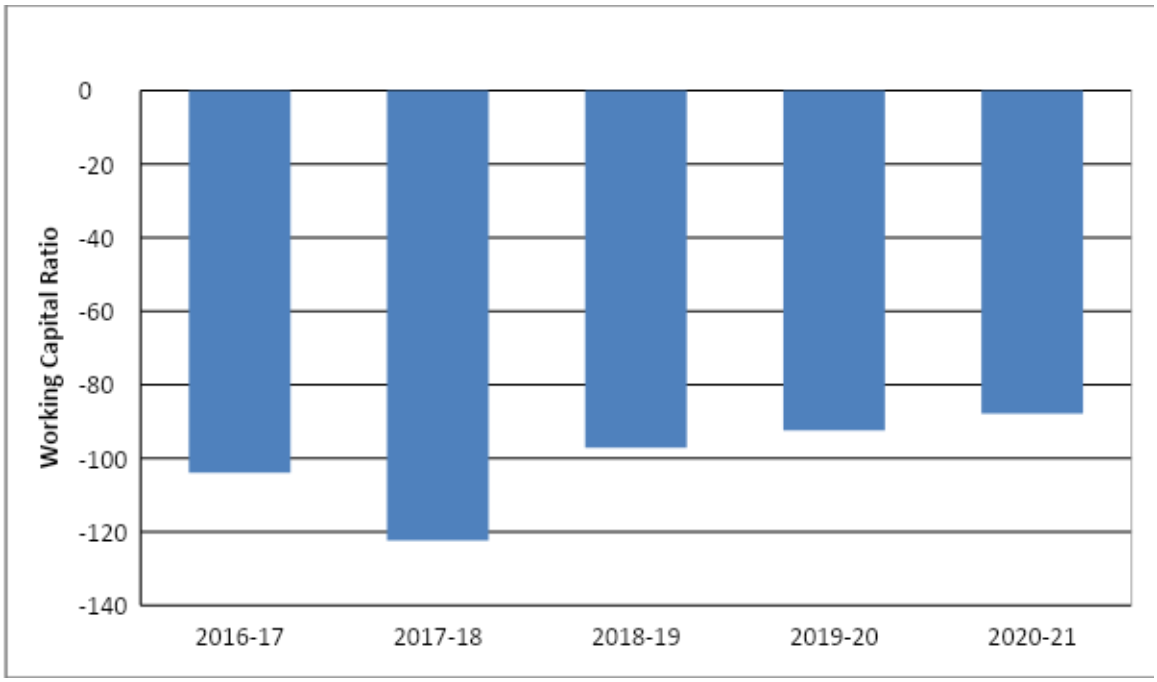
Interpretation:

During the year 2016-17 the value of debtor's turnover ratio was 21.24 which slightly reduced to 20.98 in the next year. Further it more reduced to 20.56 and 16.8 in FY 2018-19 and 2020-21 respectively. At the end of the year 2020-21 the value of the ratio has increased to 23.14, highest among all past five years.

WORKING CAPITAL RATIO

Working Capital = Current Assets – Current Liabilities

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Current Assets	15,854.59	13,568.76	13,229.30	14,971.66	12,757.07
Current Liabilities	26,251.55	25,810.82	22,940.81	24,218.95	21,538.35
% of Working Capital	-103.96	-122.42	-97.11	-92.47	-87.81



Interpretation:

During the year 2016-17 the value of working capital ratio was -103.96 which slightly reduced to -122.42 in the next year. Further it more reduced to -97.11 and -92.47 in FY 2018-19 and

2020-21 respectively. At the end of the year 2020-21 the value of the ratio has decreased to -87.81.

Chapter - 7

Findings and Conclusion

FINDINGS AND CONCLUSION

CURRENT RATIO:

The current ratio is a liquidity ratio that measures a company's ability to pay short-term obligations or those due within one year. It tells investors and analysts how a company can maximize the current assets on its balance sheet to satisfy its current debt and other payables.

FORMULA: - To calculate the ratio, analysts compare a company's current assets to its current liabilities.

Current Ratio = Current assets/ Current liabilities

ANALYSIS: - The current ratio helps investors and creditors to understand the liquidity of a company and how easily that company will be able to pay off its current liabilities. This ratio expresses a firm's current debt in terms of current assets. So, a current ratio of 4 would mean that the company has 4 times more current assets than current liabilities.

A higher current ratio is always more favourable than a lower current ratio because it shows the company can more easily make current debt payments.

If a company has to sell of fixed assets to pay for its current liabilities, this usually means the company isn't making enough from operations to support activities. In other words, the company is losing money. Sometimes this is the result of poor collections of accounts receivable. The current ratio also sheds light on the overall debt burden of the company. If a company is weighted down with a current debt, its cash flow will suffer.

QUICK RATIO:

The quick ratio is an indicator of a company's short-term liquidity position and measures a company's ability to meet its short-term obligations with its most liquid assets.

Since it indicates the company's ability to instantly use its near-cash assets (assets that can be converted quickly to cash) to pay down its current liabilities, it is also called the acid test ratio. An "acid test" is a slang term for a quick test designed to produce instant results.

FORMULA**: -** Quick Ratio = Cash + Cash Equivalents + Short Term Investments + Current Receivables / Current Liabilities

ANALYSIS: - The acid test ratio measures the liquidity of a company by showing its ability to pay off its current liabilities with quick assets. If a firm has enough quick assets to cover its total current liabilities, the firm will be able to pay off its obligations without having to sell off any long-term or capital assets.

Since most businesses use their long-term assets to generate revenues, selling off these capital assets will not only hurt the company it will also show investors that current operations aren't making enough profits to pay off current liabilities.

Higher quick ratios are more favourable for companies because it shows there are more quick assets than current liabilities. A company with a quick ratio of 1 indicates that quick assets equal current assets. This also shows that the company could pay off its current liabilities without selling any long-term assets. An acid ratio of 2 shows that the company has twice as many quick assets than current liabilities.

Obviously, as the ratio increases so does the liquidity of the company. More assets will be easily converted into cash if need be. This is a good sign for investors, but an even better sign to creditors because creditors want to know they will be paid back on time.

INVENTORY TURNOVER RATIO:

The inventory turnover ratio is the number of times a company has sold and replenished its inventory over a specific amount of time. The formula can also be used to calculate the number of days it will take to sell the inventory on hand.

The turnover ratio is derived from a mathematical calculation, where the cost of goods sold is divided by the average inventory for the same period. A higher ratio is more desirable than a low one as a high ratio tends to point to strong sales.

FORMULA: - Inventory Turnover Ratio = Cost of Goods Sold / Avg. Inventory

ANALYSIS: - Inventory turnover is a measure of how efficiently a company can control its merchandise, so it is important to have a high turn. This shows the company does not overspend by buying too much inventory and wastes resources by storing non-saleable inventory. It also shows that the company can effectively sell the inventory it buys.

This measurement also shows investors how liquid a company's inventory is. Think about it. Inventory is one of the biggest assets a retailer reports on its balance sheet. If this inventory can't be sold, it is worthless to the company. This measurement shows how easily a company can turn its inventory into cash. Creditors are particularly interested in this because inventory is often put up as collateral for loans. Banks want to know that this inventory will be easy to sell. Inventory turns vary with industry. For instance, the apparel industry will have higher turns than the exotic car industry.

DEBTORS TURNOVER RATIO:

The Debtors Turnover Ratio also called as Receivables Turnover Ratio shows how quickly the credit sales are converted into the cash. This ratio measures the efficiency of a firm in managing and collecting the credit issued to the customers.

FORMULA: - Debtors Turnover Ratio = Net Credit Sales/Average Account Receivable.

ANALYSIS: - Debtors velocity indicates the number of times the debtors are turned over during a year. Generally, the higher the value of debtors turnover the more efficient is the management

of debtors/sales or more liquid are the debtors. Similarly, low debtors turnover implies inefficient management of debtors/sales and less liquid debtors.

But a precaution is needed while interpreting a very high debtors turnover ratio because a very high ratio may imply a firm's inability due to lack of resources to sell on credit thereby losing sales and profits. There is no 'rule of thumb' which may be used as a norm to interpret the ratio as it may be different from firm to firm, depending upon the nature of business. This ratio should be compared with ratios of other firms doing similar business and a trend may also be found to make a better interpretation of the ratio.

Chapter - 8

Bibliography

BIBLIOGRAPHY

Books:-

Website:-

1. https://www.ibef.org/industry/india-automobiles
2. http://www.tatamotors.com/
3. https://www.moneycontrol.com/india/stockpricequote/auto-lcvshcvs/tatamotors/TM03