

# **Project Dissertation**

## **Comparative analysis of two-wheeler industry in India**

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2K13/MBA/04

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## Certificate from the Institute

This is to certify that the Dissertation Report titled “**Comparative Analysis of two-wheeler industry in India**” is a bonafide work carried out by Ms. Anisha Jaiswal of MBA 2013-15 and submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 in partial fulfilment of the requirement for the award of the Degree of Masters of Business Administration.

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## **Declaration**

I, **Anisha Jaiswal**, student of MBA 2013-15 of Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 declare that the Dissertation Report on “**Comparative Analysis of two-wheeler industry in India**” submitted in partial fulfilment of Degree of Masters of Business Administration is the original work conducted by me.

The information and data given in the report is authentic to the best of my knowledge.

This Report is not being submitted to any other University for award of any other Degree, Diploma and Fellowship.

**Anisha Jaiswal**

**Place:**

**Date:**

## Acknowledgement

On the very outset of this report, I would like to extend my sincere and heartfelt obligation toward all the persons who have helped me in this Endeavour. Without their active guidance, help, cooperation and encouragement, I would not have made headway in the project.

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**Anisha Jaiswal**

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## ABSTRACT

The project deals with the analysis of three companies in the two wheeler sector. These companies have been chosen from the BSE two and three wheeler indices. It consists of following three companies: **Bajaj Auto ltd., Hero Motocorp ltd. and TVS Motor Company ltd. (TVS).**

This project will try to analyze the factors affecting the growth of the above mentioned three major contributors in Indian two wheeler industry and their market share. In the analysis, financial ratios have been calculated along with the moving average graph, plotted to draw some inference regarding the growth of these three companies. Few aspects of fundamental analysis and technical analysis have been done. Fundamental analysis equips us to determine the growth potential in a particular stock and the technical analysis helps us to time the market to get maximum profitability from the situations emerging in it.

The benefit of doing fundamental analysis of a company is to maximize return over a long period of time and the technical analysis helps us to capitalize on the various opportunities emerging in the market due to the sentiments prevailing in the market. These opportunities are generally scary to a retail investor because they don't have the understanding of the markets but give a huge advantage to a technical analyst.

This project will focus on the various developments in the country that might help or hamper the growth of two-wheeler auto industry.

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# **CHAPTER 1: INTRODUCTION**

## **Introduction**

The analysis of the three companies in the 2 wheeler industry has included few aspects of fundamental analysis and technical analysis.

### **Fundamental Analysis Definition**

It is a method of evaluating a security that entails attempting to measure its intrinsic value by examining related economic, financial and other qualitative and quantitative factors.

Fundamental analysts attempt to study everything that can affect the security's value, including macroeconomic factors (like the overall economy and industry conditions) and company-specific factors (like financial condition and management).

The end goal of performing fundamental analysis is to produce a value that an investor can compare with the security's current price, with the aim of figuring out what sort of position to take with that security (underpriced = buy, overpriced =sell or short).

This method of security analysis is considered to be the opposite of technical analysis.

Fundamental analysis is about using real data to evaluate a security's value. Although most analysts use fundamental analysis to value stocks, this method of valuation can be used for just about any type of security.

In terms of stocks, fundamental analysis focuses on the financial statements of the company being evaluated.

### **Technical Analysis Definition**

It is a method of evaluating securities by analyzing statistics generated by market activity, such as past prices and volume. Technical analysts do not attempt to measure a security's intrinsic value, but instead use charts and other tools to identify patterns that can suggest future activity. Technical analysts believe that the historical performance of stocks and markets are indications of future performance.

For example in a shopping mall, a fundamental analyst would go to each store, study the product that was being sold, and then decide whether to buy it or not. By contrast, a technical analyst would sit on a bench in the mall and watch people go into the stores. Disregarding the intrinsic value of the products in the store, the technical analyst's decision would be based on the patterns or activity of people going into each store.



## **1.1 Industry Profile**

### **History of two wheeler market in India**

India is the second largest producer and manufacturer of two-wheelers in the world. It stands next only to Japan and China in terms of the number of two-wheelers produced and domestic sales respectively. Indian two-wheeler industry has got spectacular growth in the last few years. Indian two-wheeler industry had a small beginning in the early 50's. The Automobile Products of India (API) started manufacturing scooters in the country.

Bikes are a major segment of Indian two wheeler industry, the other two being scooters and mopeds. Indian companies are among the largest two-wheeler manufacturers in the world. In the initial stages, the scooter segment was dominated by API; it was later overtaken by Bajaj Auto. Although various government and private enterprises entered the fray for scooters, the only new player that has lasted till today is LML. The motorcycle segment was initially dominated by Enfield 350cc bikes and Escorts 175cc bike.

The two-wheeler market was opened to foreign competition in the mid-80s. And the then market leaders - Escorts and Enfield - were caught unaware by the onslaught of the 100cc bikes of the four Indo-Japanese joint ventures. With the availability of fuel efficient low power bikes, demand swelled, resulting in Hero Honda - then the only producer of four stroke bikes (100cc category), gaining a top slot. The first Japanese motorcycles were introduced in the early eighties. TVS Suzuki and Hero Honda brought in the first two-stroke and four-stroke engine motorcycles respectively. These two players initially started with assembly of CKD kits, and later on progressed to indigenous manufacturing. In the 90s the major growth for motorcycle segment was brought in by Japanese motorcycles, which grew at a rate of nearly 25% CAGR in the last five years.

The industry had a smooth ride in the SOs, 60s and 70s when the Government prohibited new entries and strictly controlled capacity expansion. The industry saw a sudden growth in the 80s. The industry witnessed a steady growth of 14% leading to a peak volume of 1 .gmn vehicles in 1990.

In 1990, the entire automobile industry saw a drastic fall in demand. This resulted in a decline of 15% in 1991 and 8% in 1992, resulting in a production loss of 0.4mn vehicles. Barring Hero Honda all the major producers suffered from recession in FY93 and FY94. Hero Honda showed a marginal decline in 1992.

The reasons for recession in the sector were the incessant rise in fuel prices, high input costs and reduced purchasing power due to significant rise in general price level and credit crunch

in consumer financing. Factors like increased production in 1992, due to new entrants coupled with the recession in the industry resulted in company either reporting losses or a fall in profits.

Key players in the Two-wheeler Industry:

There are many two-wheeler manufacturers in India. Major players in the 2-wheeler industry are Hero Motocorp Ltd., Bajaj Auto Ltd (Bajaj Auto) and TVS Motor Company Ltd (TVS).

Other key players in the two-wheeler industry are Kinetic Motor Company Ltd (KMCL), Kinetic Engineering Ltd (KEL), LML Ltd (LML), Yamaha Motors India Ltd (Yamaha), Majestic Auto Ltd (Majestic Auto), Royal Enfield Ltd (REL) and Honda Motorcycle & Scooter India (P) Ltd (HMSI).

## 1.2 Organization Profile

### Bajaj Auto

Bajaj Auto is a part of the [Bajaj Group](#). It is amongst the top 10 business houses in India. Its footprint stretches over a wide range of industries, spanning automobiles (two-wheelers and three-wheelers), home appliances, lighting, iron and steel, insurance, travel and finance. It was founded by [Jammalal Bajaj](#) in [Rajasthan](#) in the 1930s. It is based in [Pune](#), [Mumbai](#), with plants in [Chakan](#) (Pune), [Waluj](#) (near [Aurangabad](#)) and [Pantnagar](#) in [Uttarakhand](#). The oldest plant at [Akurdi](#) (Pune) now houses the [R&D](#) centre 'Ahead'.

Bajaj Auto is the world's sixth-largest manufacturer of motorcycles and the fourth-largest in India. It is the world's largest three-wheeler manufacturer.

On 31 March 2013, its [market capitalisation](#) was INR 520 billion (US\$9.57 billion), making it India's 23rd largest publicly traded company by [market value](#). The [Forbes Global 2000](#) list for the year 2012 ranked Bajaj Auto at 1,416.

The group's flagship company, Bajaj Auto, is ranked as the world's fourth largest two- and three-wheeler manufacturer and the Bajaj brand is well-known across several countries in Latin America, Africa, Middle East, South and South East Asia. Founded in 1926, at the height of India's movement for independence from the British, the group has an illustrious history. The integrity, dedication, resourcefulness and determination to succeed which are characteristic of the group today, are often traced back to its birth during those days of relentless devotion to a common cause. [Jammalal Bajaj](#), founder of the group, was a close confidant and disciple of Mahatma Gandhi.

The present Chairman of the group, [Rahul Bajaj](#), took charge of the business in 1965. Under his leadership, the turnover of the [Bajaj Auto](#) the flagship company has gone up from INR.72 million to INR. 120 billion, its product portfolio has expanded and the brand has found a global market.

## **Hero Motocorp**

Hero MotoCorp Ltd. (Formerly Hero Honda Motors Ltd.) is the world's largest manufacturer of two - wheelers, based in India. In 2001, the company achieved the coveted position of being the largest two-wheeler manufacturing company in India and also, the 'World No.1' two-wheeler company in terms of unit volume sales in a calendar year. Hero MotoCorp Ltd. continues to maintain this position till date. In India, it has a market share of about 46% share in 2-wheeler category. The 2006 Forbes 200 Most Respected companies list has Hero Honda Motors ranked at #108. On 31 March 2013, the market capitalisation of the company was INR 308 billion (USD 5.66 billion).

Hero Honda started in 1984 as a joint venture between Hero Cycles of India and Honda of Japan. The company has a stated aim of achieving revenues of \$10 billion and volumes of 10 million two-wheelers by 2016-17. This in conjunction with new countries where they can now market their two-wheelers following the disengagement from Honda, Hero MotoCorp hopes to achieve 10 per cent of their revenues from international markets, and they expected to launch sales in Nigeria by end-2011 or early-2012. In addition, to cope with the new demand over the coming half decade, the company was going to build their fourth factory in South India and their fifth factory in Western India,

## **TVS Motor Company**

TVS Motor Company is the third largest two-wheeler manufacturer in India and one among the top ten in the world, with annual turnover of more than USD 1 billion in 2008- 2009, and is the flagship company of the USD 4 billion TVS Group. It manufactures motorcycles, scooters, mopeds and auto rickshaws. It is India's only two-wheeler company to have won the Deming Prize awarded for commitment to quality control, received in 2002.

Over the years TVS Motor has grown to be the largest in the group, both in terms of size and turnover, with four state of the art manufacturing plants in Hosur., Mysore and Nalagarh in India and Karawang in Indonesia. TVS Motor is credited with many innovations in the Indian automobile industry, notable among them being the introduction of India's first two-seater moped, the TVS 50cc. The company became the leader in its category of sub 100 cc mopeds, having sold 7 million units. It also introduced the TVS Scooty, which is India's second largest brand in the scooterette segment. The TVS Jive launched in November 2009 became India's first clutch4ree motorbike aimed at a stress-free rider experience while the unisex scooter fl/S Wego is targeted at urban couples, featuring body-balance technology for easier handling.

### **1.3 Objectives of the Study**

The growth of a company is dependent upon various factors prevailing in the industry and economy. The wealth created is reflected in the increasing revenues for the firm.

This project's objectives: -

- To analyze the past performance in the two wheeler sector in the last couple of years and to find out whether the growth that was present in the past will be continued or not and if not then what are the reasons for it.
- To analyze the fundamentals of the company to find what are the factors affecting sales and growth of the company.
- To do an analysis on the companies by calculating various financial ratios and plotting moving average graph of prices and volume.

## **CHAPTER 2: LITERATURE REVIEW**

## **2.1 Introduction**

Many research reports have been studied to gain insights for the research. According to the CRISIL report “The Indian two wheeler industry has consistently grown a high rate of 12 percent over 2001- 02 to 2011-12, making India the second largest market for two wheelers in the world (next only to China). However with penetration in urban markets (at 120-130 two wheelers per thousand persons) and select states reaching saturation levels, there were concerns about the continued sustainability of the high growth rates. However our state- wise analysis of the Indian two- wheeler industry shows a wide gap in the current penetration level across the states, indicating considerable untapped potential income growth and improvement in road infrastructure in states with lower penetration will support the two- wheeler industry’s growth momentum.

CRISIL Research believes that a stronger presence in un-penetrated states will crucial to the two-wheeler industry growth.



## 2.2 The Two Analytical Methods

When the objective of the analysis is to determine the stock price movement and the trends, there are two basic methodologies

1. Fundamental analysis maintains that markets may misprice a security in the short run but that the “correct” price will eventually be reached. Profits can be made by trading the mispriced security and then waiting for the market to recognize its “mistake” and re price the security.

2. Technical analysis maintains that all information is reflected already in the stock price. Trends ‘are your friend’ and sentiment changes predate and predict trend changes. Investors’ emotional responses to price movements lead to recognizable price chart patterns. Technical analysis does not care what the ‘value’ of a stock is. Their price predictions are only extrapolations from historical price patterns.

Investors can use any or all of these different but somewhat complementary methods for stock picking. For example many fundamental investors use technicals for deciding entry and exit points. Many technical investors use fundamentals to limit their universe of possible stock to ‘good’ companies.

## 2.3 Introduction to Fundamental Analysis

Fundamental analysis serves to answer questions, such as:

- Is the company’s revenue growing?
- Is it actually making a profit?
- Is it in a strong-enough position to beat out its competitors in the future?
- Is it able to repay its debts?
- Is management trying to “cook the books”?

## **Fundamentals**

Quantitative and Qualitative You could define fundamental analysis as “researching the fundamentals”, but that doesn’t tell you a whole lot unless you know what fundamentals are. The various fundamental factors can be grouped into two categories: quantitative and qualitative.

In our context, quantitative fundamentals are numeric, measurable characteristics about a business. It’s easy to see how biggest source of quantitative data is the financial statements. You can measure revenue, profit, assets and more with great precision.

Turning to qualitative fundamentals, these are the less tangible factors surrounding a business such as the quality of a company’s board members and key executives, its brand-name recognition, patents or proprietary technology. Quantitative Meets Qualitative, neither qualitative nor quantitative analysis is inherently better than the other. Instead, many analysts consider qualitative factors in conjunction with the hard, quantitative factors.

### **Qualitative Factors - The Company**

Fundamental analysis seeks to determine the intrinsic value of a company’s stock. But since qualitative factors, by definition, represent aspects of a company’s business that are difficult or impossible to quantify, incorporating that kind of information into a pricing evaluation can be quite difficult. On the flip side, as we’ve demonstrated, you can’t ignore the less tangible characteristics of a company.

**Business Model:** Even before an investor looks at a company’s financial statements or does any research, one of the most important questions that should be asked is: What exactly does the company do? This is referred to as a company’s business model its how a company makes money.

**Competitive Advantage:** Another business consideration for investors is competitive advantage. A company’s long-term success is driven largely by its ability to maintain a competitive advantage - and keep it. Powerful competitive advantages, such as Coca Cola’s brand name and Microsoft’s domination of the personal computer operating system, create a moat around a business allowing it to keep competitors at bay and enjoy growth and profits. When a company can achieve competitive advantage, its shareholders can be well rewarded for decades.

**Management:** Just as an army needs a general to lead it to victory, a company relies upon management to steer it towards financial success. Some believe that management is the most important aspect for investing in a company. It makes sense - even the best business model is doomed if the leaders of the company fail to properly execute the plan.

**Corporate Governance:** Corporate governance describes the policies in place within an organization denoting the relationships and responsibilities between management, directors and stakeholders. These policies are defined and determined in the company charter and its bylaws, along with corporate laws and regulations. The purpose of corporate governance policies is to ensure that proper checks and balances are in place, making it more difficult for anyone to conduct unethical and illegal activities. Good corporate governance is a situation in which a company complies with all of its governance policies and applicable government regulations.

### **Qualitative Factors - The Industry**

Each industry has differences in terms of its customer base, market share among firms, industry-wide growth, competition, regulation and business cycles. Learning about how the industry works will give an investor a deeper understanding of a company's financial health.

**Customers:** Some companies serve only a handful of customers, while others serve millions. In general, it's a red flag (a negative) if a business relies on a small number of customers for a large portion of its sales because the loss of each customer could dramatically affect revenues.

**Market Share:** Understanding a company's present market share can tell volumes about the company's business. The fact that a company possesses an 85% market share tells you that it is the largest player in its market by far. Furthermore, this could also suggest that the company possesses some sort of "economic moat" in other words, a competitive barrier serving to protect its current and future earnings, along with its market share. Market share is important because of economies of scale- When the firm is bigger than the rest of its rivals, it is in a better position to absorb the high fixed costs of a capital-intensive industry.

**Industry Growth:** One way of examining a company's growth potential is to first examine whether the amount of customers in the overall market will grow. This is crucial because without new customers, a company has to steal market share in order to grow. In some markets, there is zero or negative growth, a factor demanding careful consideration. For example, a manufacturing company dedicated solely to creating audio compact cassettes might have been very successful in the '70s, '80s and early '90s. However, that same company would probably have a rough time now due to the advent of newer technologies, such as CDs and MP3s. The current market for audio compact cassettes is only a fraction of what it was during the peak of its popularity.

**Competition:** Simply looking at the number of competitors goes a long way in the competitive landscape for a company. Industries that have limited barriers to entry and a large number of competing firms create a difficult operating environment for firms. One of the biggest risks within a highly competitive industry is pricing power. This refers to the ability of a supplier to increase prices and pass those costs on to customers. Companies operating in industries with few alternatives have the ability to pass on costs to their customers. A great example of this is Wal-Mart. They are so dominant in the retailing business, that Wal-Mart practically sets the price for any of the suppliers wanting to do business with them. If you want to sell to Wal-Mart, you have little, if any, pricing power.

**Ratio Valuation-** Financial ratios are mathematical calculations using figures mainly from the financial statements, and they are used to gain an idea of a company's valuation and financial performance. Some of the most well-known valuation ratios are price-to-earnings and price-to-book. Each valuation ratio uses different measures in its calculations. The calculations produced by the valuation ratios are used to gain some understanding of the company's value. The ratios are compared on an absolute basis, in which there are threshold values.

### **Conclusion**

Whenever you're thinking of investing in a company it is vital that you understand what it does, its market and the industry in which it operates. You should never blindly invest in a company.

One of the most important areas for any investor to look at when researching a company is the financial statements. It is essential to understand the purpose of each part of these statements and how to interpret them.

## 2.4 Introduction to Technical Analysis

Technical analysis attempts to understand the emotions in the market by studying the market itself, as opposed to its components. If you understand the benefits and limitations of technical analysis, it can give you a new set of tools or skills that will enable you to be a better trader or investor.

### The Basic Assumptions

the field of technical analysis is based on three assumptions:

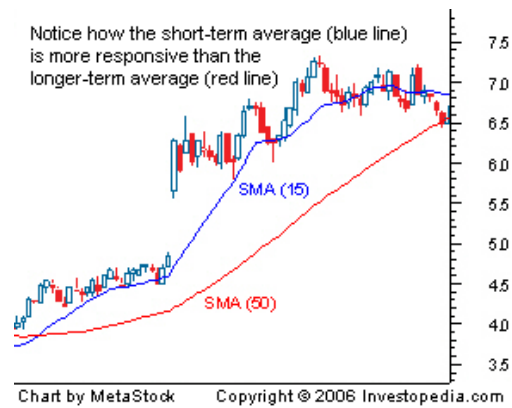
1. The market discounts everything.
2. Price moves in trends.
3. History tends to repeat itself.

### Moving Averages

Most chart patterns show a lot of variation in price movement. This can make it difficult for traders to get an idea of a security's overall trend. One simple method traders use to combat this is to apply moving averages. A moving average is the average price of a security over a set amount of time. By plotting a security's average price, the price movement is smoothed out. Once the day-to-day fluctuations are removed, traders are better able to identify the true trend and increase the probability that it will work in their favor.

**Types of Moving Averages** There are a number of different types of moving averages that vary in the way they are calculated, but how each average is interpreted remains the same. The calculations only differ in regards to the weighting that they place on the price data, shifting from equal weighting of each price point to more weight being placed on recent data. The three most common types of moving averages are simple, linear and exponential.

**Simple Moving Average (SMA):** This is the most common method used to calculate the moving average of prices. It simply takes the sum of all of the past closing prices over the time period and divides the result by the number of prices used in the calculation. For example, in a 10-day moving average, the last 10 closing prices are added together and then divided by 10. As you can see in Figure 1, a trader is able to make the average less responsive to changing prices by increasing the number of periods used in the calculation. Increasing the number of time periods in the calculation is one of the best ways to gauge the strength of the long-term trend and the likelihood that it will reverse.



**Figure 9**

**Linear Weighted Average:** This moving average indicator is the least common out of the three and is used to address the problem of the equal weighting. The linear weighted moving average is calculated by taking the sum of all the closing prices over a certain time period and multiplying them by the position of the data point and then dividing by the sum of the number of periods. For example, in a five-day linear weighted average, today's closing price is multiplied by five, yesterday's by four and so on until the first day in the period range is reached. These numbers are then added together and divided by the sum of the multipliers.

**Exponential Moving Average (EMA):** This moving average calculation uses a smoothing factor to place a higher weight on recent data points and is regarded as much more efficient than the linear weighted average. Having an understanding of the calculation is not generally required for most traders because most charting packages do the calculation for you. The most important thing to remember about the exponential moving average is that it is more responsive to new information relative to the simple moving average. This responsiveness is one of the key factors of why this is the moving average of choice among many technical traders.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1 Data Collection**

The data used in this project for ratio analysis is taken from the annual reports of the company. The graphs and charts used for Technical analysis of the companies have been created using historical share prices (monthly share price from 1st April 2008 to V' April 2014) taken from Yahoo Finance. Simple moving average for both closing prices and trade volume was calculated and represented by line and bar charts respectively.

The other data which might affect the growth of the company in the near future like the expansion plan and its advantages over competitors has been taken from various websites and annual reports.

The data used for valuation i.e. the beta of the company and the return on market portfolio has been taken from the Bombay Stock exchange website.

### **3,2 Valuation Technique**

The valuations of the companies have been done by the Gordon Growth Model, The expected return from the stock has been derived from the CAPM model, which is dependent upon the beta of the stock and the return on market portfolio.

The CAPM model can be written as:

$$\text{Expected return (Re)} = \text{RFR} + \text{Beta (Return on Market - RER)}$$

And the return given by the share is calculated through analyzing the stock prices and the dividend that was given by the company in the past 5 years and to compare it with the return expected by the investor.

If we know, the past average return given by the company; Then we can calculate whether investment in this stock is worth or not. This return is then compared to the investor's requirement of the company to determine whether the company is a good investment or not.



**CHAPTER 4:**  
**ANALYSIS OF 2 WHEELER COMPANIES IN INDIA**

## **KEY FACTORS AFFECTING THE SALES OF TWO WHEELERS**

1. Government policy impact on petrol prices : Petrol prices determine the running cost of two wheelers expressed in rupees per kilometer. Petrol prices are the highest in India as GOI subsidizes kerosene and diesel. But with the change in the GOI policy to reduce the subsidy, the prices of petrol will remain constant at the current prices which will have a positive effect on two wheelers market. This trend would actually affect positively the whole automotive industry.

2. Improvement in disposable income: With the increase in salary levels due to entry of multinationals following liberalization process the disposable income has improved exponentially over the years. This will have a multiplier effect on demand for consumer durables including two wheelers. This is already witnessed in improved demand two wheelers.

3. Implementation of mass transport system: Many states have planned to implement mass transport systems in state capitals in the future. This will have a negative impact on demand for two wheelers in the long run. But taking into account the delays involved in the implementation of such large infrastructure projects, we expect the demand to be affected only few years down the line.

4. Availability of credit for vehicle purchase: The availability and cost of finance affects the demand for two wheelers as the trend for increased credit purchases for consumer durables have increased over the past few years.

5. Growing Urbanisation

6. Inflation

## **Market Share of Automobile Industry**

- 2 wheeler- 76 %
- Passenger Vehicle- 16.25 %
- Commercial Vehicle- 4.35 %
- 3 Wheeler- 4.4 %

## **80 % of market share between**

- Hero Motocorp- 41 %
- Bajaj Motors- 25 %
- TVS- 14 %

## **Segmental Analysis**

- Motorcycles- 78 %
- Mopeds- 17 %
- Scooters- 5 %

## **Capacity Utilization**

- Heromotocorp- 78 %
- Bajaj Motors- 75 %
- TVS- 86 %

## **Expansion plans**

### **Hero Motocorp**

- 7,50,000 plant in Rajasthan
- 1.2 million capacity which will increase to 1.8 in next phase of Gujarat
- 1 million in expanding existing plants

### **Bajaj Motors**

- 1.26 million in expanding existing plants

### **TVS**

- No such plans

## **Hero Motocorp**

### **Current strategy**

- Fully utilize the domination in the economy segment
- Have bigger presence in the premium segment
- Enjoying 3 % advantage in terms of COGS over Bajaj
- Operating and non operating cost is 9 % dearer than Bajaj. This is because of high non cash expenses.
- Their utilization capacity is the most optimum among the three.
- They have a robust collection mechanism which ensures their collection period is by far the best in the industry.
- Their production speed is the fastest among the three players
- They are also making their customers happy by providing the best payment period
- They have best conversion cycle despite less suppliers' bargaining power
- Able to roll the money around 3 times before paying it to the suppliers.
- Generating 58 paisa out of every rupee invested

## **Bajaj Motors**

### **Current strategy**

- Target the youth with sporty bikes
- Their collection period is 4 times more lag than Hero but better than TVS
- Production speed is just above 30 % slower than Hero
- Like hero they are also having negative cash conversion cycle.
- Able to roll the money around 1.5 times before paying it to the suppliers.
- Generating 50 paisa out of every rupee invested, which is worst among the three

### **Reccomendations**

- Need to reduce the COGS which is as high as 71 %
- Strategy of backward integration can be adopted
- Need to capture more market to fully exploit capacity utilization
- Need to enter the fastest growing scooter segment

## **TVS**

### **Current strategy**

- Maintain dominance in rural/ semi urban population
- Focus on economy segment in urban population
- Presence in premium segment
- Robustness of collection mechanism is similar to bajaj
- Production process is where they are losing big time
- Payment terms is similar to the other two
- Due to the production speed it is the only company with a positive conversion cycle among the three
- Their money is locked in the system for three days
- They are able to generate 60 paisa for every rupee invested which is the best in the industry.

### **Reccomendations**

- Need to expand its capacity to maintain the market share
- Can take advantage of its financial leveragability which is as low as 0.61
- Need to reduce its COGS as it is most expensive for them
- Need to get their expansion plans in place

## 4.1 Bajaj Auto

### Ratio Analysis

Liquidity and solvency ratio	Mar'13	Mar'12	Mar'11	Mar'10	Mar'09
Current ratio	0.8	0.69	0.84	0.88	0.84
Quick ratio	0.71	0.55	0.73	0.64	0.76
Debt Equity ratio	0.07	0.46	0.84	0.84	0.29
Long Term Debt Equity ratio	0.03	0.45	0.71	0.84	0.29

**Inference:** Quick ratio close to 1 and a lower debt equity ratio imply that ability of the firm to repay its short term liabilities is satisfactory. Debt equity and long term debt equity ratio have shown a good improvement in year 2011 (a good sign for short term investors and shareholders).

Management Efficiency ratio	Mar'13	Mar'12	Mar'11	Mar'10	Mar'09
Inventory Turnover ratio	32.8	28.87	28.64	29.33	36.88
Debtors Turnover ratio	51.77	37.41	27.45	21.93	22.66
Investments Turnover ratio	32.8	28.87	28.64	29.33	36.88
Fixed Assets Turnover ratio	4.85	3.5	2.6	2.95	2.96
Total Assets Turnover ratio	3.14	2.77	2.53	3.02	1.32

**Inference:** Bajaj Auto has good sales volume to meet its inventory, debtors, investment and fixed assets. This shows that the company is well active in the market and is not suffering from the problem of dead or non performing assets



Profitability ratios	Mar'13	Mar'12	Mar'11	Mar'10	Mar'09
Operating Profit Margin(%)	19.76	21.19	12.57	12.29	14.11
Profit Before Interest And Tax Margin(%)	18.56	19.78	10.88	10.03	11.65
Gross Profit Margin(%)	19.02	20.03	11.08	10.32	12.09
Cash Profit Margin(%)	15.7	16.2	10.55	10.48	12.18
Net Profit Margin(%)	19.8	14.23	7.4	8.32	12.66
Return On Capital Employed(%)	67.57	59.01	32.8	39.71	20.9

**Inference:** Profitability ratios determine how profitable the company is i.e. how much the profit the company is able to make from its operations. Bajaj Auto has shown an excellent operating profit margin and net profit margin. Only in fiscal years 2010 and 2011 its performance was not up to the mark (according to its own standards). Also return on capital employed has shown a steep rise in the last three years.

## Technical Analysis

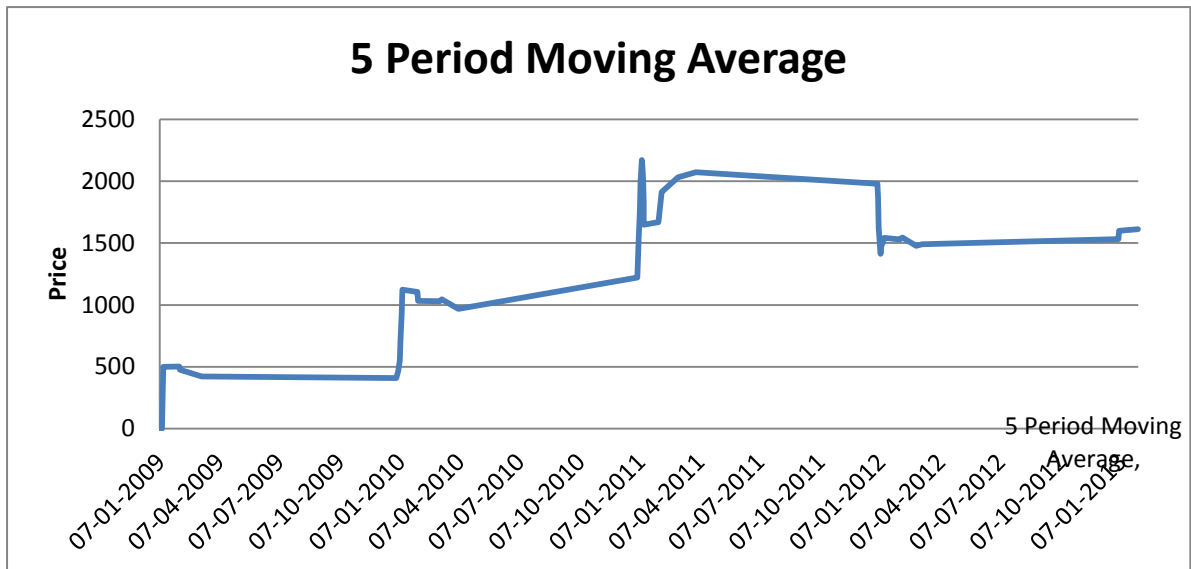


Figure 10

**Inference:** The price of Bajaj Auto had shown a steep decrease, but it has shown a steady increase since the last 13 months hovering around the 1700 mark.

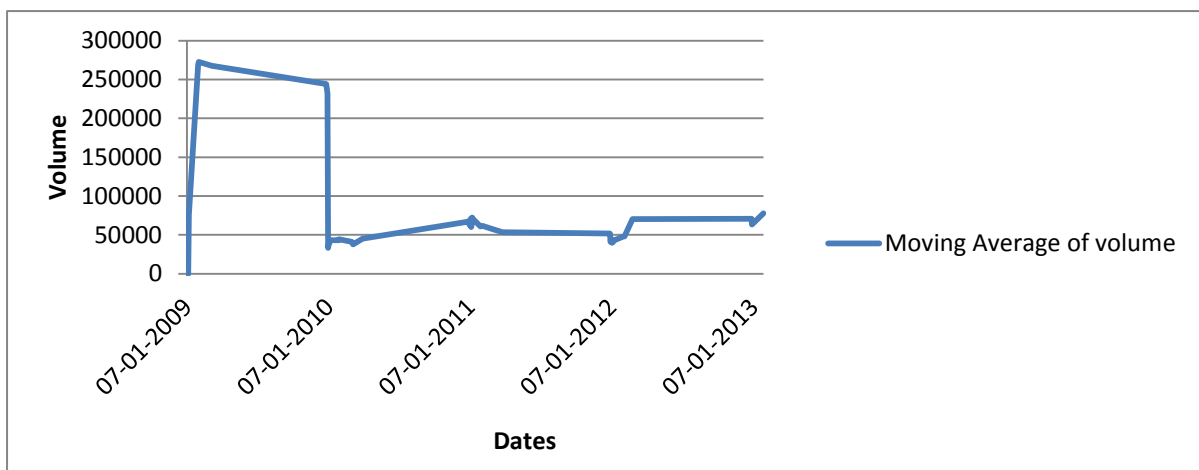


Figure 11

**Inference** The volume of trades for Bajaj Auto has been stable and around 50000 positive mark, indicating positive sentiments about the company in the market.

## Valuation

Return on market for past 10 years ( $R_m$ ) = 14.48%

Beta for Bajaj Auto (taken from BSE website ) = 1.17

Risk free rate (Indian Government Bonds ) = 8%

Expected return ( $R_e$ ) = RFR + Beta (Return on Market — RFR)

= 0.08 + 1.17(0.1448-0.08)

= 0.1558 or 15.58%

And the return given by the company in the past 5 years:

Capital gain: price of stock today-price of stock 5 years back

= 1677.9—574.45

= 1103,45

Dividend over 5 years:

= 40 + 22 + 20

=82

TOTAL GAIN = 1103.45 + 82 = 1185.45

Return given by stock on year to year basis is positive and is in accordance with the investor expected return of 15.58%.

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## 4.2 Hero Motocorp

### Ratio Analysis

Liquidity And Solvency Ratios	Mar'13	Mar'12	Mar'11	Mar'10	Mar'09
Current Ratio	0.24	0.58	0.46	0.48	0.57
Quick Ratio	0.15	0.49	0.31	0.32	0.4
Debt Equity Ratio	0.5	0.02	0.02	0.04	0.07
Long Term Debt Equity Ratio	0.5	0.02	0.02	0.04	0.07

**Inference:** Both current and quick ratios have shown a sudden decline in year 2011 which is alarming. It simply states that the company is suffering from either less assets or excessive liabilities. Also debt equity and long term debt equity ratios have also shown an increase which can prevent potential investors from investing in the company.

Management Efficiency Ratios	Mar'13	Mar'12	Mar'11	Mar'10	Mar'09
Inventory Turnover Ratio	43.88	42.8	47.53	42.82	36.25
Debtors Turnover Ratio	162.08	122.63	55.1	321	40.11
Investments Turnover Ratio	43.88	42.8	47.53	42.82	47.48
Fixed Assets Turnover Ratio	3.7	6.29	5.34	5.89	9.54
Total Assets Turnover Ratio	4.68	4.8	3.36	3.52	3.99
Asset Turnover Ratio	3.7	6.29	5.34	5.89	6.01

**Inference:** Hero Motocorp has good sales volume to meet its inventory. Inventory turnover ratio has been pretty steady. However debtors turnover ratio has shown a steep rise especially during the years 2012 and 2013 which is a worrying sign and can hint that the company has tried to reduce its debtors by good numbers. Asset turnover ratio has been steady whereas fixed asset turnover ratio has shown a steep decline in year 2013 which hints that the company may have sold some of its fixed assets.

Profitability Ratios	Mar'13	Mar'12	Mar'11	Mar'10	Mar'09
Operating Profit Margin(%)	13.4	17.32	14.22	13.22	12.13
Profit Before Interest And Tax Margin(%)	11.26	16.01	12.64	11.57	10.63
Gross Profit Margin(%)	11.33	16.11	12.75	11.67	12,85
Cash Profit Margin(%)	11.36	14	10.84	9.59	9.98
Net Profit Margin(%)	9.89	14	10.3	9.27	8.58
Return On Capital Employed(%)	52.13	75.07	43.33	41.57	43.48

**Inference:** Hero Motocorp has shown a good gross profit and net profit margin. Return on capital employed has also been very good and steady i.e. the return for investors have been excellent in the last five years.

## Technical Analysis

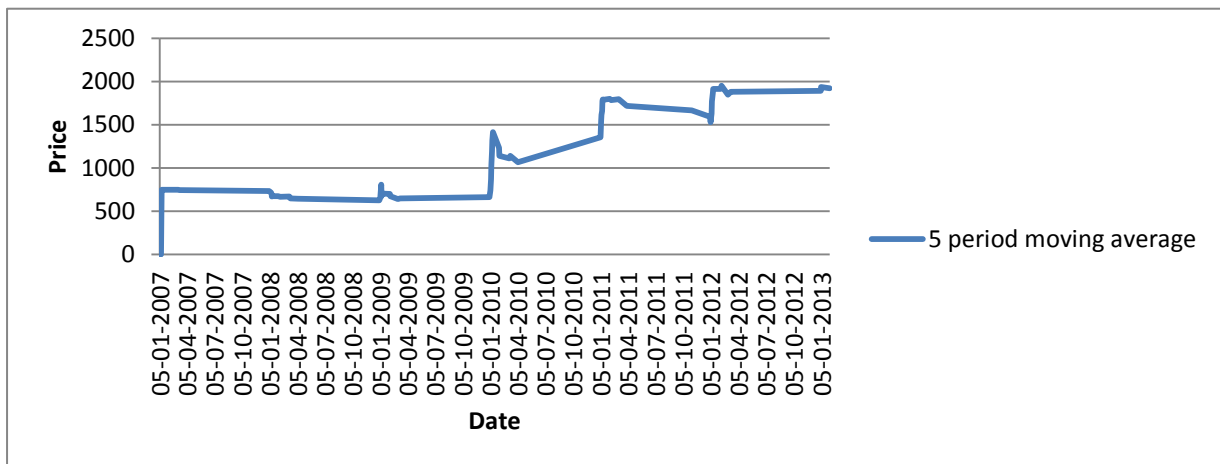


Figure 12

**Inference:** The price of Hero Motocorp has shown a constant increase in the last 13 months its price is the highest among its competitors. The recent time shows a declining trend but nothing can be said about the future price movement.

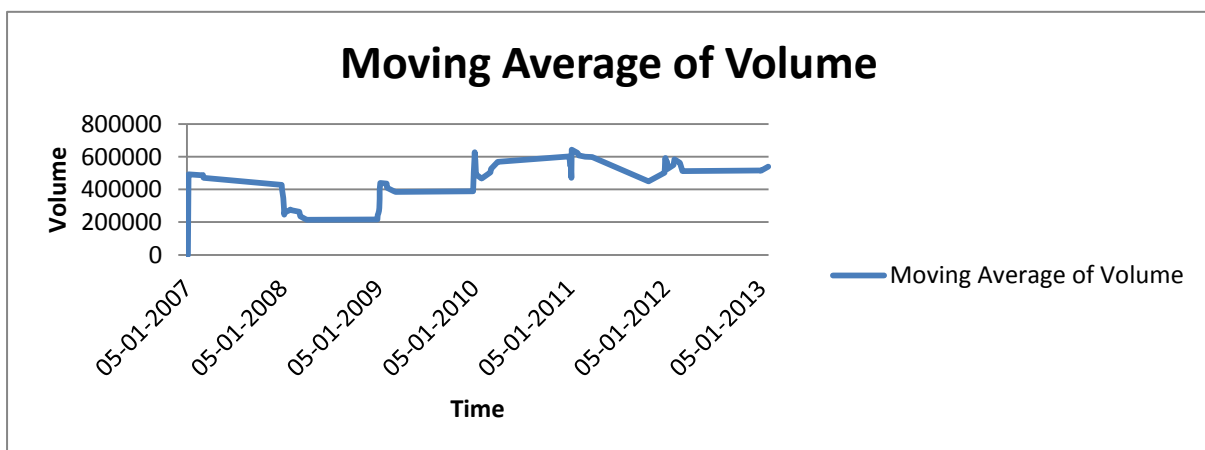


Figure 13

**Inference:** Volume of trades for Hero Motocorp have been on average around the 500,000 mark. In the last 10 months it has shown an increase and is expected to be around 600,000 mark.

## Valuation

Return on market for past 10 years (Rm) = 14.48%

Beta for Hero Motocorp (taken from BSE website ) = 0.56

Risk free rate (Indian Government Bonds ) = 8%

Expected return (Re) = RFR + Beta (Return on Market — RFR)

=0.08+1.17(0.1448-0.08)

= 0.1162 or 11.62%

And the return given by the company in the past 5years

Capital gain: price of stock today-price of stock 5 years back

= 2053.65 - 825.5

= 1228.15

Dividend over 5 years:

= 35 + 70 + 30 + 80 + 20 + 19 + 17 + 20

= 291

TOTAL GAIN = 1228.15 + 291 = 1519.15

Return given by stock on year to year basis is positive and is in comparison with the investor expected return of 11.62%.

### 4.3 TVS Motor Company

#### Ratio Analysis

Liquidity And Solvency Ratios	Mar'13	Mar'12	Mar'11	Mar'10	Mar'09
Current Ratio	1	1.13	1.15	1.07	1.04
Quick Ratio	0.59	0.75	0.68	0.47	0.52
Debt Equity Ratio	0.79	1.16	1.11	0.81	0.78
Long Term Debt Equity Ratio	0.72	1.16	1.11	0.81	0.78

**Inference:** TVS Motor Company has shown satisfactory quick ratio which is close to acceptable value of 1, however its current ratio has been around 1 for the last five years. It has definitely improved its debt equity and long term debt equity ratios in the year 2011. Short term debtors will not hesitate in investing in this company.

Management Efficiency Ratios	Mar'13	Mar'12	Marc'11	Mar'10	Mar'09
Inventory Turnover Ratio	13.27	17.12	13.31	9.61	11.86
Debtors Turnover Ratio	25.17	21.71	27.25	32.31	45.46
Investments Turnover Ratio	13.27	17.12	13.31	9.61	11.86
Fixed Assets Turnover Ratio	3.713	2.29	1.97	1.8	2.6
Total Assets Turnover Ratio	3.46	2.33	2.14	2.16	2.67
Asset Turnover Ratio	3.13	2.29	1.97	1.8	2.6

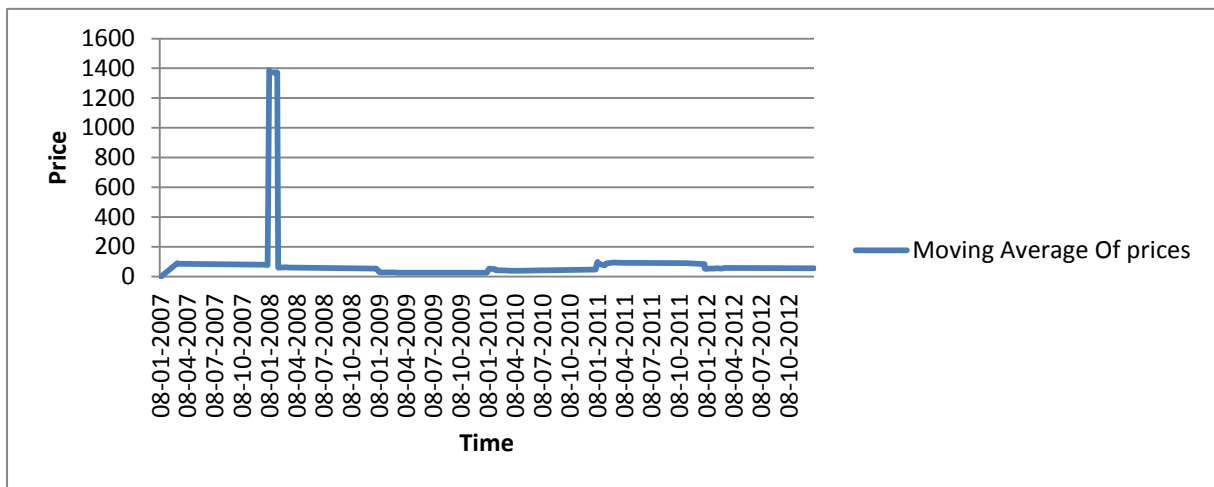
**Inference:** TVS Motor Company has shown good sales volume to meet its inventory. Inventory turnover ratio has not deviated much which is a good sign. Debtors turnover ratio has also not shown much deviation since the last three years. Asset turnover ratio has shown a steady increase which indicates the firm is worth investing.



Profitability Ratios	Mar'13	Mar'12	Mar'11	Mar'10	Mar'09
Operating Profit Margin(%)	4.92	4.79	3.29	1.4	3.63
Profit Before Interest And Tax Margin(%)	3.12	2.4	0.48	-1.49	1.33
Gross Profit Margin(%)	3.18	2.44	0.49	-1.53	1.35
Cash Profit Margin(%)	4.94	5.06	3.53	2.96	3.76
Net Profit Margin(%)	3.08	1.98	0.82	0.96	1.69
Return On Capital Employed(%)	18.38	9.85	5.37	1.08	8.66

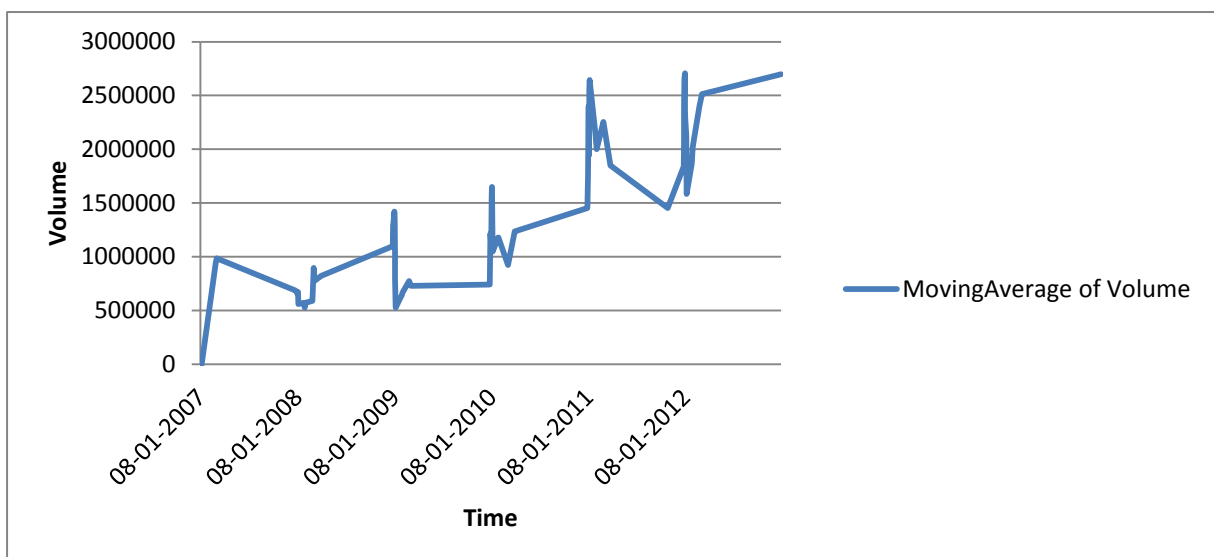
**Inference:** Both gross profit and net profit margin have shown an increase in the last three years. Also return on capital employed has increased sharply in the last three years which is a good sign for investing.

## Technical Analysis



**Figure 14**

**Inference:** Price for TVS Motor Company has decreased continuously from the 25th month showing that things are not right for TVS.



**Figure 15**

**Inference:** Volume of trades has increased gradually over the period of time but still is at highest level as compared to its competitors, however recent past has shown an uptrend.

## Valuation

Return on market for past 10 years ( $R_m$ ) = 14.48%

Beta for TVS Motor Company( taken from BSE website ) =1.19

Risk free rate (Indian Government Bonds ) = 8%

Expected return ( $R_e$ ) = RFR + Beta (Return on Market — RFR)

=  $0.08 + 1.19(0.1448 - 0.08)$

= 0.00616 or 0.62%

And the return given by the company in the past 5years

Capital gain: price of stock today-price of stock 5 years back

= 40.7—151.6

=-110.9

Dividend over 5 years:

:0.60 + 0.50 + 0.50 + 0.70 + 0.70 + 0.70 + 0.15 + 0.70 + 0.60

:5.15

TOTAL LOSS = 110.9-5.15 = 105.75

Return given by stock on year to year basis is negative.

## **CONCLUSION**

Indian two-wheeler industry has shown spectacular growth in the last few years. India being a growing economy provides a huge market for this industry.

The sales volume has definitely increased at a rapid pace indicating a bright future for this sector. However the analysis show that this industry has less number of players and therefore is ruled by the top players. New entering players are facing stiff competition in increasing business revenue. The industry as a whole has faced an increase in volume and decrease in prices in the last 5-6 months.

On the basis of comparative analysis the result for the three companies can be summarized as:

Company	Analysis
Bajaj Auto	<p>The company has superior product range as compared to its competitors and the volumes are increasing but the company needs to work on their expansion plans to maintain the market share The valuations shows that the company has given good returns to the investors which is more than the expected rate of return</p> <p>Increasing volumes and prices indicate strong positive sentiments in the market.</p>
Hero Motocorp	<p>The company has shown a steady growth in terms of financial aspect. Sales volume has been increasing steadily. Valuation proves that the company has maximized the profit for its investors. The company has the highest market share in the 2 wheeler industry.</p>
TVS Motor Company	<p>The company has shown a satisfactory growth in terms of financial aspect. Sales volume has been increasing steadily. But valuation proves that the company has not been able to generate profit for investors. The company needs to work on expansion plans in order to maintain their market share.</p>

## **Suggestions for two wheeler companies**

Fill the gaps in their product portfolio

- Electrical vehicles for environment friendly
- Launch a new product which provides more comfort and security

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## **ANNEXURE**

## Bajaj Auto

Date	Open	High	Low	Close	Volume	Adj Close	Moving Avg. of Historical Prices	Moving Avg. of Volume
3/1/2013	1820	1820	1610	1671.9	35400	1677.9		
2/1/2013	1620	1839	1585	1798.95	45306	1798.95		
1/2/2013	1595	1608.5	1410	1600.95	112100	1600.95		
12/1/2012	1696	1738.95	1567.8	1592.8	43200	1592.8		
11/1/2012	17263	1773-8	1556.25	1672,85	44800	1672.85	1668.69	56160
10/3/2012	1532	1822,15	1478.2	173315	45200	173315	1679.74	58120
9/2/2012	1589	1694.9	1486	1534.35	39400	1534.35	1626.82	56940
8/1/2012	1470	1615.35	1351.25	1573	40700	1573	1621.23	42660
7/1/2012	1420	1475.85	1405.25	1451.5	35600	1461.5	1594.97	41140
6/1/2012	1344.35	1439.9	1293,25	1405,9	49700	1405.9	1541.58	42120
5/2/2012	1482.5	1489.4	1250.05	1344.35	72800	1344.35	1463.82	47640
4/1/2012	1470	1496	1364	1474	33700	1474	1451.75	46500
3/1/2012	1275	1473	1275	1459.8	39700	1459.8	1429.11	45300
2/1/2012	1270	1364	1189,6	1262.3	56300	1268.3	1390.47	50440
1/3/2012	1559.95	1564.95	1214,1	1248,65	151000	1248.65	1359.02	70700
12/1/2011	1590	1624.85	1430.25	1541,5	62100	1541.5	1398.45	68560
11/1/2011	1530	1664.5	1513.25	1575.35	55100	1575.35	1418.72	72240
10/1/2011	1489.9	1611.45	1473,1	1513.8	78300	1513.8	1429.52	80560
9/1/2011	2770	3045	1429.5	1471.6	97100	1871.6	1470,18	88720
8/2/2011	27156	2852.9	2535.05	2729,4	83400	2729.4	1766.33	75200
7/1/2011	2475	2734.95	2390	2688,05	69500	2688.05	1995.64	76680
6/1/2011	2151	2506.9	2150	2483.3	21300	2442.05	2177.23	69920
5/3/2011	2110.05	2231	1999.9	2214,7	34500	2177.92	2317.41	61160
4/1/2011	2011	2131	1987.95	2094,3	34300	2059.52	2441,95	48600
3/2/2011	1820	2055	1800	2011.1	43500	1977.7	2298.29	40620

2/1/2011	1668.85	1870	1620	1817,4	130800	1787.22	2124.16	52880
1/4/2011	1770	1835.4	1641.15	1773,1	41100	1743.66	1982.12	56840
12/1/2011	1502.65	1800	1480	1761.7	64500	1732.44	1891.52	62840
11/3/2010	1425	1615	1391.25	1569.5	36500	1543.44	1786.55	63280
10/1/2010	1490	1665	1368	1398	52000	1374.78	1663.94	64980
9/1/2010	1229.95	1535	1161.85	1499	51400	1474.11	1500,26	49100
8/3/2010	1220	1356	1045	1215,45	49200	1195.27	1488,73	50720
7/1/2010	999	1262	935.25	1224.65	67400	1204.31	1381.32	51300
6/1/2010	1047.4	1155	922.5	994,05	23200	956.25	1266.23	48540
5/4/2010	640.1	1057	639	1028.5	89100	989.49	1192.35	56060
4/1/2010	624.95	687.95	591	633	20700	608.93	1019.15	49920
3/2/2010	505.15	635	480.1	618.45	29300	594.93	899.15	45940
2/2/2010	479	536	445	533.35	22300	513.07	761.49	36920
1/1/2010	392.15	502	502	473.9	33100	455.88	657.46	38900
12/1/2009	324.05	444	294.65	391.2	79800	316.32	529.98	37040
11/3/2009	534.4	550	307.15	320.85	36000	308.65	467.55	40100
10/1/2009	588.5	615.05	435	544.95	150200	524.23	452.85	64280
9/1/2009	575	641	530.15	598.65	62300	575.89	465.91	72280
8/1/2009	522.7	612.95	490	587.6	37000	565.26	488.65	73060
7/1/2009	450	544.9	395	531	49800	510.81	516,61	67060
6/2/2009	586	618	436.1	450.45	53900	433.32	542.53	70640
5/2/2009	945	945	543	574.45	1017700	530.02	548.43	244140

## Hero Motocorp

Date	Open	High	Low	Close	Volume	Adj Close	Moving Avg. of Historical Prices	Moving Avg. of Volume
3/1/2013	1957	2065	1810.05	2053.65	513100	2053.65		
2/1/2013	1870	2209.95	1865.6	1950	469200	1950		
1/2/2013	1914.8	1995.65	1724.75	1864	755600	1864		
12/1/2012	2035	2108.9	1764.9	1905	444500	1905		
11/1/2012	2159	2249.7	1971.1	2011	832700	2011	1956.73	603020
10/3/2012	1933.95	2231.45	1904.35	2185.2	575600	2185.2	1983.04	615520
9/2/2012	2110	2237	1915.6	1946	623100	1946	1982.24	646300
8/1/2012	1785.9	2068	1720	2065	487400	2065	2022.44	592660
7/1/2012	1890	1924.7	1730.25	1791	453800	1759.13	1999.64	594520
6/1/2012	1845.1	1889	1708.5	1859.8	397900	1826.71	1969.4	507560
5/2/2012	1715	1949	15)515	1850.95	530900	1818.01	1902.55	498620
4/1/2012	1595	1949.8	1592.65	1708	671900	1677.61	1854.95	508380
3/1/2012	1475.2	1619	1413.8	1599	611800	1508.29	1761.75	533260
2/1/2012	1665	1668	1375.75	1458.2	785900	1375.48	1695.19	599680
1/3/2012	2014	2020	1591	1640.35	384600	1547.3	1651.3	597020
12/1/2011	1962.2	2019	1559	1987.25	1237100	1874.52	1678.56	738260
11/1/2011	1841.6	2061.9	1795	1967.8	401400	1856.17	1730,52	684160
10/1/2011	1865	1927	1777.1	1862	432300	1756.37	1783.12	648260
9/1/2011	1795.2	1888	1690	1870	532100	1763.92	1865.48	597500
8/2/2011	1320.6	1933	1669.9	1796.05	454500	1694.17	1896.62	611480
7/1/2011	2055	2057	1790.5	1814.9	612000	1683.14	1862.15	486460
6/1/2011	1950	2070	1901.55	2043.3	380100	1894.96	1877.25	482200
5/3/2011	1900	1949.8	1818	1947.45	387900	1806.07	1894.34	473320
4/1/2011	1965	2094	1810	1909	616800	1770.41	1902.14	490260
3/2/2011	1)90	2079.65	1780	1948.9	517100	1738.2	1932.71	502780
2/11/2011	1638	1800	1621	1798	491600	1603.61	1929.33	478700
1/4/2011	1732.9	1738.5	1601	1660.05	393500	1480.58	1852.68	481380

12/1/2010	1733.9	1777.1	1640	1723.7	395900	1537.34	1807.93	482980
11/3/2010	1570	1808.7	1460.5	1720	519800	1534.04	1770.13	463580
10/1/2010	1680	1774.7	1535	1565	409700	1395.8	1693.35	442100
9/1/2010	1519.85	1748.45	1502.3	1685.1	426700	1502.92	1670.77	429120
8/3/2010	1615	1648.85	1381	1515	613500	1351.21	1641.76	473120
7/1/2010	1402	1765	1311.7	1599.95	655000	1407.64	1617.01	524940
6/1/2010	1350.5	1574.7	1332.5	1395.05	573400	1227.37	1552.02	535660
5/4/2010	1199.75	1587.8	1153	1335	608200	1174.53	1506.02	575360
4/1/2010	1075	1199	1015.25	1184.9	834300	1042.48	1405.98	656880
3/2/2010	932	1103,85	895	1072.1	653300	943.23	1317.4	664840
2/2/2010	878	999.6	861.25	935.5	445000	323.05	1184.51	622840
1/1/2010	801.4	890	751.25	876.5	468700	771.15	1080.8	601900
12/1/2009	798	842.8	720.05	802.25	449200	705.82	974.25	570100
11/3/2009	765	823.7	691.25	800	607200	703.84	897.27	524680
10/1/2009	880	898	661.1	745	633800	655.45	831.85	520780
9/1/2009	824	890	740	873	522800	768.07	819.35	536340
8/1/2009	785	848	770.25	825	310700	709.71	809.05	504740
7/1/2009	685.1	808.9	632.5	788.05	278700	677.92	806.21	470640
6/2/2009	759.9	835	663	685	189800	589.27	783.21	387160
5/2/2009	850.05	865	732,35	752	259500	646.91	784.61	312300
4/1/2009	700	867.7	694	853.95	246800	734.61	780.8	257100
3/3/2009	759	785	635.05	689.9	421100	593.49	753.78	279180
2/1/2009	696	779	662.3	762	353200	655.51	748,57	294080
1/1/2009	697.7	721	550	682	249700	586.69	747.97	306060
12/3/2008	20.55	749	680	697	202500	599.59	736.97	294660
11/1/2008	730	752	619.9	723	240200	621.96	710.78	293340
10/1/2008	732.1	174.7	690	725	236400	623.68	717.8	256400
9/3/2008	720	775	633.5	741.1	192200	637.53	713,62	224200
8/1/2008	670	684	610	649	237400	558.3	707.02	221740

7/2/2008	6811	730	655.1	674.05	202300	579.85	102.43	221700
6/4/2008	701.6	734	650	692.6	216800	581.08	696.35	217020
5/13/2008	6952	742.8	647.8	732.4	308900	614.47	697.83	231520
4/2/2008	660.05	699	620.9	691.3	217000	579.99	687.87	236480
3/1/2008	658.3	707.5	611	688.75	314900	577.85	695.82	251980
2/1/2008	7104	754	636	677.75	328800	568.62	696.56	277280
1/2/2008	765	807.2	703	716.3	461300	600.96	701.3	326180
12/1/2008	740	795	705.25	763.7	394800	640.73	707.56	343360
11/1/2007	757	770	680.1	742.25	464500	622.74	717.75	392860
10/3/2007	189	789.8	703.6	757.9	569300	635.87	731.58	443740
9/1/2007	711.5	797	684.6	774.9	560300	650.13	751.01	490040
8/1/2007	702	731	664	721	661000	604.91	751.95	529980
7/3/2007	808	810.2	688.3	705.9	479500	575.22	740.39	546920
6/1/2007	800	809.8	635	793.65	441600	645.72	750.67	542340
5/1/2007	825.05	898.4	152	801.8	396800	653.37	759.45	507840
4/3/2007	905	915s	812	825.05	421300	672.31	769.48	480040

## TVS

Date	Open	High	low	Close	Volume	Adj. Close	Moving Avg. of Historical Prices	Moving Avg. of Volume
3/1/2013	47.5	50.3	36.8	40.7	2400400	40.7		
2/1/2013	52	55.7	46.5	47.4	3387500	47.4		
1/2/2012	52.3	55.2	46	52.1	2462600	52.1		
12/1/2012	61	61.95	46.2	52.3	1301800	52.3		
11/1/2012	69	69.6	58.35	59.6	2305100	59.6	50.42	2371480
10/3/2012	61.85	70.3	57.7	68.7	1859600	68.7	56.02	2263320
9/2/2012	56.5	66.2	55.9	60.8	2399100	60.8	58.7	2065640
8/1/2012	50.1	57.65	48.65	55.5	2014600	55.5	59.38	1976040
7/1/2012	54.25	58.1	48.7	49.4	1239300	48.85	sas	1963540
6/1/20112	55.2	56.5	50.15	53.9	1051300	53.3	57.66	1712780
5/2/2012	5835	5835	50.1	54.55	1992000	53.94	54.83	1739260
4/1/2012	60.85	63	54.75	56.1	4027100	55.47	53.89	2064860
3/1/2012	51.4	61.3	51	60.3	3025900	59.63	54.85	2267120
2/1/2012	55.1	58.15	43.6	50.7	3021700	50.13	55.11	2623600
1/3/2012	72.6	73.95	50.35	5475	3846400	54.14	55.28	3182620
12/1/2011	83.3	84.9	65	70.65	2766200	69.3	58.5	3337460
11/1/2011	74	87.4	72.15	82.1	4886300	80.53	63.7	3509330
10/1/2011	73	80.2	71.4	73.3	179700	71.9	66.3	3263520
9/1/2011	146.5	150.85	69.5	71.85	1814900	70.48	70.53	3022160
8/2/2011	141.5	151.7	133.65	141.6	1086800	138.89	87.9	2470240
7/1/2011	121	139.7	105.5	138.85	3567500	136.19	101.54	2630500
6/1/2011	104.95	120.6	96	120.15	2374600	117.4	109.15	2128160
5/3/2011	97	110.75	86.4	104.6	1440900	102.21	115.41	2056940
4/1/2011	82.85	99.6	80.1	97.2	1779200	94.98	120.48	2049800

3/2/2011	73	83.4	71.3		82	1090000	80.13	108.56	2050440
2/11/2011	70.5	71.3	58		70.25	786900	58.64	94.84	1494320
1/4/2011	65.5	79.8	65		77.3	2856500	73.92	8627	1590700
12/1/2010	58.1	68.3	5555		64.7	683000	61.87	78.29	1439120
11/3/2010	55	63.9	52.8		57.5	624100	54.99	70,35	1208100
10/1/2010	6345	66	52		53.85	904200	51.5	64.72	1170940
9/1/2010	48.9	64	48.1		63.55	1909600	60.77	6338	1395480
7/1/2010	45.6	65.55	39.5		58.35	1584500	55.8	56.37	1237600
6/1/2010	45.1	54.25	40.65		45 0	160010	43.03	53.87	1432800
5/4/2010	33.7	50.2	33.25		44.75	2464400	42.13	52.05	1744840
4/1/2010	23.3	35	20.55		32.6	3692100	30.69	45.86	2101340
3/2/2010	19.35	23.45	18.6		22.8	1588300	21.47	40.7	2185880
2/2/2010	16.95	20.6	16.8		19.5	810600	18.36	32.93	2031100
1/1/2010	22.5	24.5	14.95		16.6	561200	15.63	27.25	1823320
12/1/2009	23.35	23	21.4		22.65	495900	21.32	22.83	1429620
11/3/2009	31.45	32.25	21,75		23	247400	21.65	20.91	740680
10/1/2009	33.85	37.75	27.15		29.4	475200	27.68	22.23	518060
9/1/2009	32.15	35.95	25		33.15	435600	31.21	24.96	443060
8/1/2009	31.2	35.25	30.6		32.6	507600	30.69	28.16	432340
7/1/2009	26	32.9	23.05		31.4	714000	28.95	29.91	475960
6/2/2009	36.9	39.9	26.25		26.4	569400	24.34	30.59	540360
5/2/2009	44	47.4	36		36.4	1333100	33.56	31.99	711940
4/1/2009	36.2	43.75	32.05		42.95	1864200	39.6	33.95	997660
3/3/2009	44	45.55	32,05		34.75	995400	32.04	34.38	1095220
2/1/2009	39.8	44.9	36		4.4	1714300	40.57	36.9	1295280
1/1/2009	73.05	78.95	30		39	2009300	33.96	39.42	1583260
12/3/2008	65	78.85	64.5	72.15	188320	66.53	46.57	1693280	



11/1/2008	57.8	73.6	54.05	103420	65.15	60.07	51,01	1527280
10/1/2008	70.05	73.25	52.5	58.1	778300	53.57	55.68	1483860
9/3/2008	65.5	77	62	70.25	1639600	64.78	60.93	1468920
8/1/2008	58	69.7	53.05	65.75	411700	60.63	6628	1149400
7/2/2008	60.95	66.8	55.55	58.25	632700	53.57	63.5	899300
6/4/2008	69.5	72	60.6	60.95	790800	56.05	62.66	850620
5/3/2008	64	71.5	60.3	65.55	860400	60.28	64.15	867040
4/2/2008	59	65.7	51	64.45	542300	59.27	62.99	647580
3/1/2008	62	65	53	59.55	761600	54.76	61.75	717560
2/1/2008	75.5	78.4	56	61.25	737700	56.33	62.35	738560
1/2/2008	8255	87	71.25	74.9	800900	68.88	65,14	740580
12/1/2007	97.95	100.8	77.9	87.25	523800	80.24	69,48	673260
11/1/2007	106	110.9	92.25	97 5	795700	89.67	76.09	723940
10/3/2007	126.7	129.4	105,05	108.95	666900	100.2	85,97	705000
9/1/2007	94.8	127	94.5	124.45	2240400	113.72	98,61	1005540
8/1/2007	89	99	87.15	92.85	461900	84.85	102.2	937740
7/3/2007	99	101.9	78,45	89.1	701800	81.42	102.57	973340