

Project Dissertation Report on
“EQUITY RESEARCH ON AUTOMOBILE SETOR”

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CERTIFICATE FROM THE INSTITUTE

This is to certify that the project “Equity research report on Automobile sector”, is a bonafide work carried out by Mr. Mukesh Kumar Raj of MBA 2017- 2019 batch and has been submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi 110042 in partial fulfilment of the requirement for the award of the degree of Masters of Business Administration.

Signature of Guide

Signature of HOD(DSM)

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DECLARATION

I, the undersigned **Mukesh Kumar Raj**, Student of **Delhi School of Management** batch of MBA 2017-2019 hereby declare that the project “Equity Research on Automobile Sector” presented in this report is my own work and has been carried out under the supervision of Prof. Pradeep Kumar Suri.

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

This Work has not been previously submitted to any other university for examination.

Place:

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EXECUTIVE SUMMARY

As companies grow their shareholders are benefitted with capital appreciation and good dividend on investment in equity shares of such companies. Number of companies listed in the stock exchange (BSE & NSE) has been increasing every year with new IPOs coming in the market.

The main aim of this project is to do equity research in the Automobile sector of India and to find out the opportunities for investment in the researched stocks where correct valuation of stocks can be found by doing fundamental analysis and supplemented by technical analysis. Indian Economy is one of the fastest developing economies in the world with 7.1% GDP growth and overall domestic automobiles sales increased at 7.01 per cent CAGR between FY13-18 with 24.97 million vehicles getting sold in FY18.

In India people are realizing that equity has potential to give the highest return as compared to other investment alternatives however people are not aware how to do equity research, they just invest in shares based on tips given by brokers, friends or family members. The investors can either develop the skills required to make and manage their investments or find someone with the qualification who they can trust to do so like Investment/Financial advisor or Research analysts.

Equity valuation begins with the analysis of the sector in which you want to make an investment; if the sector analysis shows promising growth and profitability by comparing the estimated supply and demand then we analyze various companies in the sector. A Company is analyzed fundamentally to check its financial strength and historic performance.

The report starts from the fundamental analysis where EIC (Economy, Industry, Company) analysis of the Automobile companies (Ashok Leyland and Maruti Suzuki India Limited) is done. The economy of India and Automobile industry are analyzed on the basis of various factors and indicators. Above mentioned three companies were analyzed based on the various qualitative and quantitative factors. After analyzing these auto companies, the stock price is estimated using DCF and Multiples valuation method. Financial Modeling is used to project the forecasted Balance sheet, Income sheet and Cash Flow statement. After the target price was calculated with the help of forward P/E and EPS, EV/EBITDA models and finally the difference was taken between the target price and market price to arrive at the implied upside.

Finally, the conclusion and recommendations are given with respect to derived results of each company.

Table of contents

1. Introduction	1
I. Introduction to Securities Market	2
a) Securities	1
b) Equity shares	1
c) Debt instruments	2
d) Derivatives	2
III. objective of the project	3
2. Research Methodology	4
3. Fundamental Analysis	9
I. Economic analysis	10
a) GDP	11
b) Monetary policy and liquidity	12
c) Inflation	12
d) Interest rate	13
e) International influences	13
f) Consumer sentiment	14
g) Fiscal policy	14
h) Input factors to growth (Technology, Labour and Capital)	16
i) Business Confidence	17
II. Industry analysis- Introduction to Automobile Industry	18
a) Market Structure	19
b) Installed Capacity	22
c) Production trend	22
d) Exports trend	25
e) Sales trend	25
f) SWoT analysis of Automobile industry	27
g) Key players	30
III. Company analysis	31
I. Maruti Suzuki India Limited	31
a) Stock Details, Shareholding pattern	32
b) Industry and Maruti Suzuki India Limited Sales data	35
c) Balance sheet	37
d) Income statement	38
e) Cash flow and ratios	40
f) Valuation- Discounted Cash flow method	41
g) Capital asset pricing model (CAPM)	41
II. Ashok Leyland Limited	43

a) Stock details	43
b) Shareholding pattern	44
c) First quarter of fiscal year 19 performance	45
d) New axle load norms	46
e) Industry sales data	48
f) Ashok Leyland sales data	48
g) Income statement	49
h) Balance sheet	51
i) Cash flow and ratios	52
j) Valuation- Discounted cash flow	53
k) Relative valuation (P/E, P/BV, EV/EBITDA)	54
5. Conclusion and recommendation.....	56
References	57

List of Tables

TABLE 1 INSTALLED CAPACITY IN INDIA (IN MILLION).....	22
TABLE 3 PRODUCTION TREND IN AUTOMOBILE SECTOR (2012-2018)	23
TABLE 4 GROWTH IN PRODUCTION TREND (2013-2018)	23
TABLE 5 EXPORTS TREND IN INDIAN AUTOMOBILE SECTOR	25
TABLE 6 SALES TREND OF AUTOMOBILE SECTOR	25
TABLE 7 STOCK DETAILS OF MARUTI SUZUKI INDIA LIMITED.....	32
TABLE 8 INDUSTRY SALES DATA	36
TABLE 9 MARUTI SUZUKI SALES DATA	36
TABLE 10 VALUATION OF MARUTI SUZUKI INDIA LIMITED USING DCF METHOD.....	43
TABLE 11 INDUSTRY SALES DATA OF COMMERCIAL VEHICLES	49
TABLE 12 ASHOK LEYLAND SALES DATA	51
TABLE 13 VALUATION OF ASHOK LEYLAND	56

1. INTRODUCTION TO SECURITIES MARKET

Securities: These are the financial instruments that are issued to raise funds from those that have it to those that need it. It helps in transferring of resources from those with idle or surplus resources to others who need it for productive ways.

Securities are issued by companies, financial institutions or the government which in turn are purchased by investors who have surplus resources to invest.

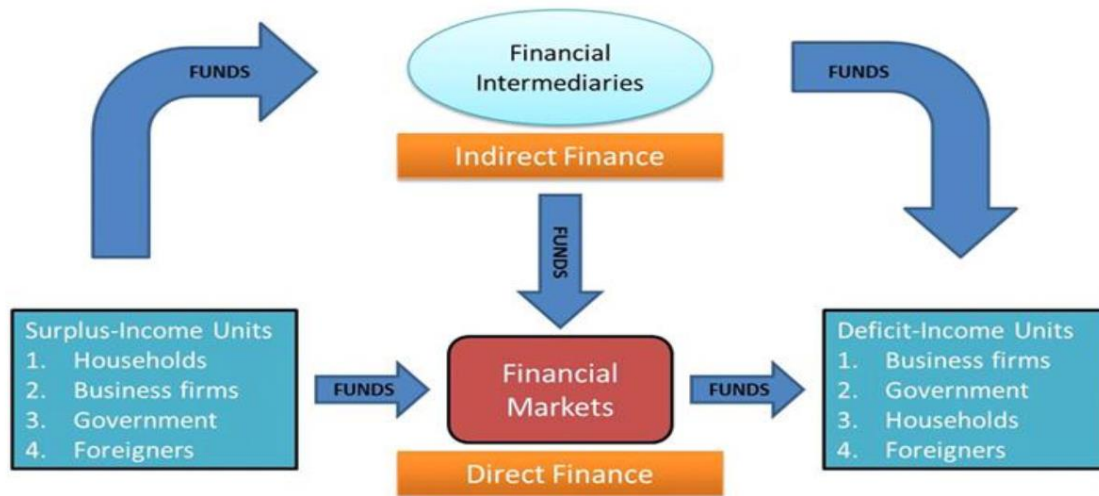


Figure 1 Flow of funds in financial market

Broadly the financial products can be categorized as equity, debt and derivative products each of them having distinct risk and return characteristics that define its suitability for the investor.

Equity Shares: Equity shares represent the form of fractional ownership in a business entity where Equity shareholders collectively own the company. Equity shares are the last or residual claim against assets and paid only after all other creditors are paid. They bear the risk and enjoy the rewards of ownership. These are directly issued by companies initially in the primary market by Initial Public offering and then get listed on stock exchange for secondary market operations. The distribution of dividend out of the profits after payment to debt holders is decided in the general body meeting and accordingly corporate will announce the dividend rates. Dividend can be distributed

either in form of cash or as new shares. The most distinguishable types of equity are preference equity and ordinary equity. Common equity have no preferential rights.

Debt Instruments: Traditionally, debt has been identified as a long-term source of fund for a corporate enterprise. Bonds are expected to offer a fixed rate of interest and bondholders have a claim on the issuer of the security for the payment of the principal amount at the time of repayment of debt. Private sector debt instruments are called corporate bonds and within this category, there are a number of instruments differentiated by their claim on assets of the enterprise. Debentures are debt instruments that are secured on the assets of the enterprise by a fixed charge (on specific assets) or a floating charge (on assets in general) whereas those private enterprise debts that do not have any fixed or floating charge on the assets of the enterprise are termed as Unsecured Bonds.

Derivatives: A derivative instrument is a product/contract that does not have any value on its own, that is, it derives from some underlying product/security. A derivative takes any one of the following forms- forward contracts, futures contracts, options or swaps.

A Forward contract is a one to one bipartite contract to be performed in the future, at the terms decided today. It suffers from poor liquidity and default risk.

Futures Contracts are organized/standardized contracts, traded on regulated exchanges. These are very liquid in nature and clearinghouse provides the settlement guarantee for the contracts traded in the exchange.

options are instruments whereby the option seller gives the option buyer the right to sell or buy a specific asset at a specific price on or before a specific date. option seller is one who gives/writes the option and has an obligation to perform, in case the option buyer desires to exercise the option contract whereas option buyer is one who buys the option and has the right to exercise the option but is under no obligation to fulfil the contract if prices are unfavourable. There are two types of options namely, call option and put options. A call gives the holder of the option contract the right but not the obligation, to buy the underlying instrument. Conversely, a put option gives the holder the right, but not the obligation, to sell the underlying instrument.

OBJECTIVES OF THE PROJECT:

- The main objective of project is to do fundamental analysis of Automobile companies.
- To provide an overview of the Automobile sector and analysing the stocks of that sector.
- To identify the growth drivers of the Automobile sector.
- To estimate future prices by using financial modeling.
- To justify the current investment in the chosen securities.
- To understand the movement and performance of stocks.
- To identify the top line and bottom-line of the companies selected under Automobile sector and the factors that affect them.

This report will help the investors (clients) to know about the current growth prospects of Indian economy and Automobile sector. They will get to understand various factors affecting Automobile sector and their impact on the growth of industry. This report will help them in comparing the above mentioned three companies (Ashok Leyland and Maruti Suzuki India Limited) and their estimated future share prices, so that they can invest in better options by seeing and understanding the research behind the recommendation.

2. Research methodology

Methods used in the study for valuation purpose:

I. Fundamental analysis methods

1. Discounted Cash flow method
2. Relative valuation

1. **Discounted Cash flow method:** In valuing a business, the cash flows (outflows and inflows) at various stages over its expected life is considered. A rational way to find the value of a business may be to first find the inflows over outflows (called Free Cash Flows – FCFs) at different points in time and then bringing them to today (find present Value – PV) at an appropriate rate of return (Discount Rate - DR). This is called Discounted Cash Flow (DCF) method to value a project or a business/firm.

The two principal factors that drive the valuation of a firm using DCF are estimating the expected cash flows and the second is the determination of the rate used to discount these cash flows. There are two ways to look at the cash flows from a business.

one is the free cash flows to the firm (**FCFF**), where the cash flows before any payments are made on the debt outstanding are taken into consideration. This is the cash flow available to all capital contributors-both equity and debt.

The second way is to estimate the cash flows that accrue to the equity investors alone. Interest payments on debt is deducted from the FCFF and net borrowings added to it to arrive at the free cash flows for equity (**FCFE**). It is to be noted that the cash flows to the equity investors is not taken to be the dividends alone. It is extended to include the residual cash flows after meeting the obligations to the debt holders and dividends to preference shareholders. FCFF may be used for valuation if FCFE is likely to be negative or if the capital structure of the firm is likely to change significantly in the future.

FCFF is computed as: Earnings Before Interest & Tax (EBIT) less Tax plus Depreciation & Non-cash charges less Increase (Decrease) in working capital less Capital Expenditure Incurred (Sale of assets)

FCFE is computed as FCFF Less Interest plus Net borrowing.

Apart from depreciation, other non-cash charges include amortization of capital expenses and loss on sale of assets, which are added back. Gains on the sale of assets is deducted from the FCFF and FCFE calculations. Valuation requires a forecast of the cash flows expected in the future. This can be done by applying the historical growth rate exhibited by company or a rate estimated by the analysts based on their information and analysis. The growth rate can be calculated as the product of the retention rate and the return on equity. A firm may have a period of high growth in revenues, profitability, capex and other performance parameters and then stabilize to a steady growth. Since equity is for perpetuity and it is not possible to forecast the cash flows forever, the practice is to calculate a terminal value for the firm once the high growth period is over. The terminal value may be calculated using the **perpetuity growth method** where the cash flow is expected to grow forever at a steady though modest rate once the high growth period is over.

The **terminal value** is calculated by multiplying the cash flow for the last year of the high growth period by $(1 + \text{Growth rate})$ and dividing the resultant value by $(\text{Discounting rate} - \text{Growth rate})$.

The terminal value is added to the cash flows for the growth or projection period, and then discounted to the present value. The discount rate used in the DCF valuation should reflect the risks involved in the cash flows and therefore the expectations of the investors.

To calculate the value of the firm, the FCFF is discounted by the **weighted average cost of capital (WACC)** that considers both debt and equity. To calculate the value of equity, FCFE is discounted using the cost of equity. In most of the valuation exercises, cost of debt is taken as the prevailing interest rates in the economy for borrowers with comparable credit quality. And, cost of equity is the rate of return on investment that is required by the company's common shareholders.

Capital Asset Pricing Model - CAPM, which establishes the relationship between risk and expected return forms the basis for cost of equity.

It has three components: the risk free rate of return (**Rf**); a return that reflects the return expected on a stock market portfolio (**Rm**); and a return that compensates for the business and financial risks specific to the stock of the company itself, known as the company's **beta**. Beta of a stock measures change in the stock prices vis a vis change in the benchmark index/stock market. Given the above understanding, cost of equity is generally computed with help of Capital Asset Pricing Model (CAPM), which defines cost of Equity as follows:

$$\mathbf{K_e = R_f + \beta * (R_m - R_f)}$$

Where: Rf = Risk Free Rate,

(Rm – Rf) = Market risk premium (MRP), and β = Beta

The Weighted Average Cost of Capital of the firm (WACC) is then calculated as under:

$$\begin{aligned} \mathbf{WACC} &= [\mathbf{K_e * Equity / (Equity+ Debt)}] + [\mathbf{K_d * (1-Tax)* Debt / (Equity+ Debt)}] \\ &= [\mathbf{K_e * W_e}] + [\mathbf{K_d * (1-T_x)*W_d}] \end{aligned}$$

Where Kd = Cost of Debt, Wd = Weight of Debt, Ke = Cost of Equity, We = Weight of Equity The free cash flows are then discounted at the appropriate discount rate to arrive at the Enterprise Value (EV) of the firm or the value of equity, as the case may be.

2. **Relative Valuation:** Unlike DCF valuation, which is described as a search for intrinsic value, we are much more reliant on the market when we use relative valuations. We assume that the market is correct in the way it prices stocks, on average, but that it makes errors on the pricing of individual stocks. An advantage is that relative valuations provide us information as to how the market is currently valuing stocks at several levels (aggregate market, alternative industries, individual stock within industries). The core idea of relative valuations is to convert the values of companies sharing similar attributes to comparable multiples and then seeing how those stocks stand in relation to their peers. Relative valuation techniques are used because the value of an asset here is derived from the pricing of comparable or relative assets, standardized using a common variable such as earnings (P/E), book value (P/BV) or Enterprise Value to EBITDA (EV/EBITDA).

Price to Earnings Ratio: The P/E ratio of a stock is a simple tool for measuring the markets' temperature. It is calculated by dividing a stock's price by the company's earnings per share or EPS.

$$\text{P/E Ratio} = \text{Price per share} / \text{Annual earnings per share}$$

The P/E ratio suggests how much investors are willing to pay for each rupee of a company's earnings. Higher the P/E, more expensive is a stock, as investors are willing to pay more for each rupee of a company's earnings.

Price to Book Value ratio: The price to book value (P/BV) measures how much are the markets are willing to pay for the measured accounting value of a company's assets. Book value of a company is simply its net worth or equity. Book value per share is the net worth divided by the number of shares outstanding.

$$\text{Price to book value (P/BV)} = \text{Price per share divided by Book value per share.}$$

Enterprise Value to EBITDA: EV is enterprise value while EBITDA is earnings before interest, tax, depreciation and amortization. The values of EV and EBITDA are used in order to find EV/EBITDA ratio of an organization and this metric is widely used to analyze and measure an organization's RoI i.e. return of investment as well as its value. Enterprise value, or EV, shows a company's total valuation. EV is used as a better alternative to market capitalization. The added

components used in the EV calculation are debt, preferred interest, minority interest and total cash and cash equivalents. The values of the debt, minority interest and preferred interest are added with the calculated market capitalization value, while the total cash and cash equivalents are subtracted from the calculated value to get the Enterprise Value (EV).

$EV = \text{Market Cap} + \text{Debt} + \text{Minority Interest} + \text{Preference Shares} - \text{Cash \& Cash Equivalents}$.

EBITDA or earnings before interest, taxes, depreciation and amortization is a measure used to get a representation of an organization's financial performance. Here, the operating profit is equal to the net profit, interest and taxes added together. The depreciation expense and amortization expense play a major role in EBITDA calculation.

$$EBITDA = \text{operating Profit} + \text{Depreciation} + \text{Amortization}$$

KEY PLAYERS

Each segment in the Indian automobiles sector has few established key players which hold major portion of the market.

- **Maruti Suzuki India Limited:** Market leader in the passenger vehicles segment and held around 50 per cent market share in the segment in FY18. The company recorded its highest ever sales of 1,779,574 units during 2017-18, a year-on-year increase of 13.4 per cent. Total sales of the company in terms of volumes increased 19.9 per cent year-on-year in April-May 2018.
- **Tata Motors:** Market leader in the commercial vehicles segment held 44 per cent market share in FY18. overall sales of the company in terms of volume increased 58 per cent year-on-year in May 2018.
- **Hero MotoCorp and Honda** are the top two players in the two-wheelers segment, with market share of 37 per cent and 29 per cent, respectively in FY18.
- **Bajaj Auto** is a leader in three wheelers with 58.15 per cent market share in FY18. **Piaggio** Vehicles is the second leader in three wheelers with 24.05 per cent market share in FY18.

3. FUNDAMENTAL ANALYSIS

The unique nature of capital market instruments forces investors to depend strongly on fundamental factors to help them in their investment decisions. It can be presumed that if not for investment through capital markets, investors would have to invest in an economy directly. Companies are a part of the industrial and business sector, which in turn is a part of the overall economy. The performance of securities that represent the company can be said to depend on the performance of company itself. Selection of an investment will hence start with fundamental analysis. Fundamental analysis examines the economic environment, the industry performance and the company performance before making an investment decision.

Fundamental analysis is the examination of the underlying forces that affect the interests of the economy, industrial sectors and companies. It tries to forecast the future movement of the capital market from a broader perspective using signals from the economy, industry and company.

In the context of national economy, fundamental analysis focuses on economic data to evaluate the present and future growth patterns of the nation.

At the Industry level, the supply and demand forces are examined with reference to the products offered, substitute data, management policies, business vision, competitive strength and so on. Thus to justify investment decisions in a company's share, fundamental analysis combines economic, industrial, and company analysis to derive a share's current fair value and forecast its future value from this information. If the current fair value is not equal to the current market price and the future estimates are favourable, then the share is either over valued or undervalued and that market price will ultimately approach the expected fair value. Based on the assumption that market prices do not accurately reflect all available information, fundamentalists see an opportunity to invest and capitalize on perceived price discrepancies.

Top down approach: Analysts generally tend to look first into the national economy before analyzing the industry performance and then the individual companies within an industry.

ECONOMIC ANALYSIS

Economic analysis aims at determining the economic climate is conducive and is capable of encouraging the growth of the business sector, especially the capital market. When the economy expands, most industry groups and companies are expected to benefit and grow. Similarly when the economy declines, most of the sectors and companies anticipate facing survival problems.

Economic analysis implies examination of GDP, government financing, government borrowing, consumer durable goods market, non durable goods and capital goods market, savings and investment pattern, interest rate, inflation rate, tax structure, FDI and money supply.

Performance of a macro economy usually has two components:

1. The national economy and
2. The effect of the international economy on the national economy.

Growth of a national economy is mainly determined by domestic consumption pattern. Economists point that higher consumption leads to economic growth. This is based on the argument that growth in consumption pattern forecast sales, which in turn include increases in the production of goods and services in the economy.

Parameters for economic analysis

1. GDP
2. Monetary policy and liquidity
3. Inflation
4. Interest rate
5. International influences
6. Consumer sentiment
7. Fiscal policy
8. Input factors to growth (Technology, Labour and capital)
9. Business Confidence

1) GDP: Gross domestic product is a measure of a country's economic activity and is defined as the total amount of goods and services produced in a country in a year. It is calculated by adding the market values of all the final goods and services produced in a year.

The major components of GDP are

- a) Consumption spending
- b) Investment spending
- c) Government Expenditure
- d) Goods and services produced domestically for export
- e) Production of goods and services consumed in the process of distributing imports to the domestic consumer.

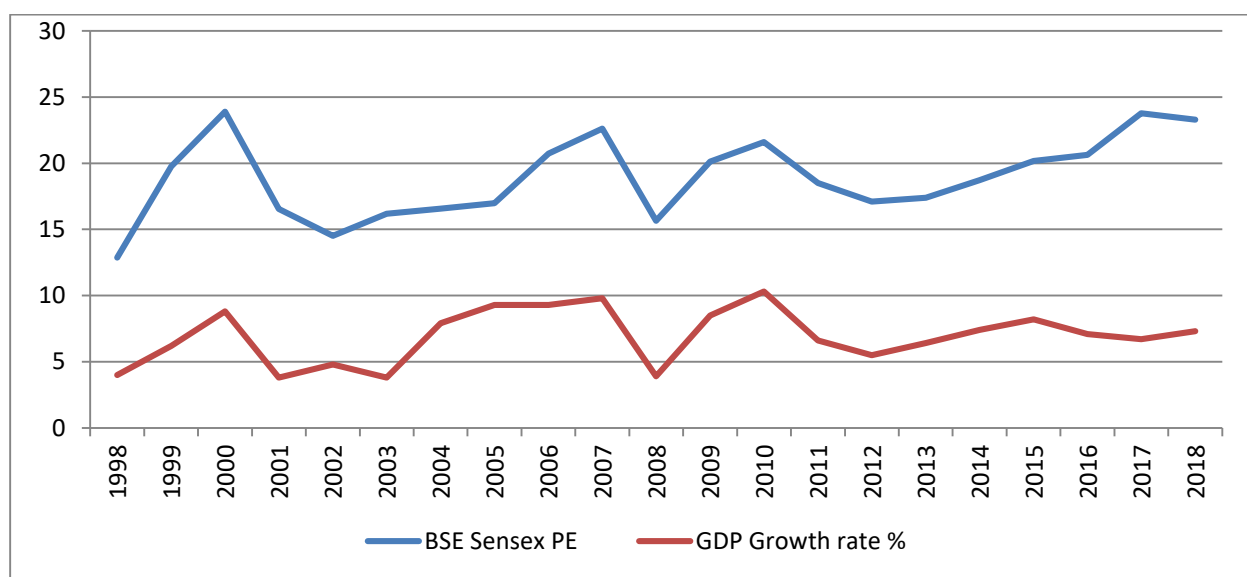


Figure 2 Movements of BSE Sensex PE and GDP growth rate

Figure 2 shows almost similar movements of GDP growth rate and capital market growth represented by its price earnings (P/E) multiplier. A company's growth prospects are identified through its P/E multiplier in the capital market. Similarity in the movement of GDP growth and BSE Sensex P/E multiplier to identify its growth prospects as they are highly correlated and that the prediction of capital market movement through GDP expectations can be very useful and relevant for investors. The International Monetary Fund (IMF) has forecasted India's GDP at 7.3% in the year 2019 and 7.5% in 2020.

- 2) **Monetary policy and liquidity:** Business need access to funds to borrow, raise capital and invest in assets. Similarly, individuals also may need access to funds to borrow to purchase a car, house etc. If the monetary policy in an economy is very tight and banks have little excess to lend, sources of capital become scarce and economic activity may slow down or decline. Although a good monetary policy and liquidity in the economy is essential for economic growth, excess liquidity can be harmful. Excess money supply growth can lead to inflation, higher interest rate and higher risk premium leading to costly sources of capital and slow growth.
- 3) **Inflation:** Inflation can be defined as a trend of rising prices caused by demand exceeding supply. over time, even a small annual increase of, say, 1 per cent will tend to influence the purchasing power of the nation. The economic effects of minor inflationary effects can be positive and often can be taken as a sign that the economy is in an expansionary phase.

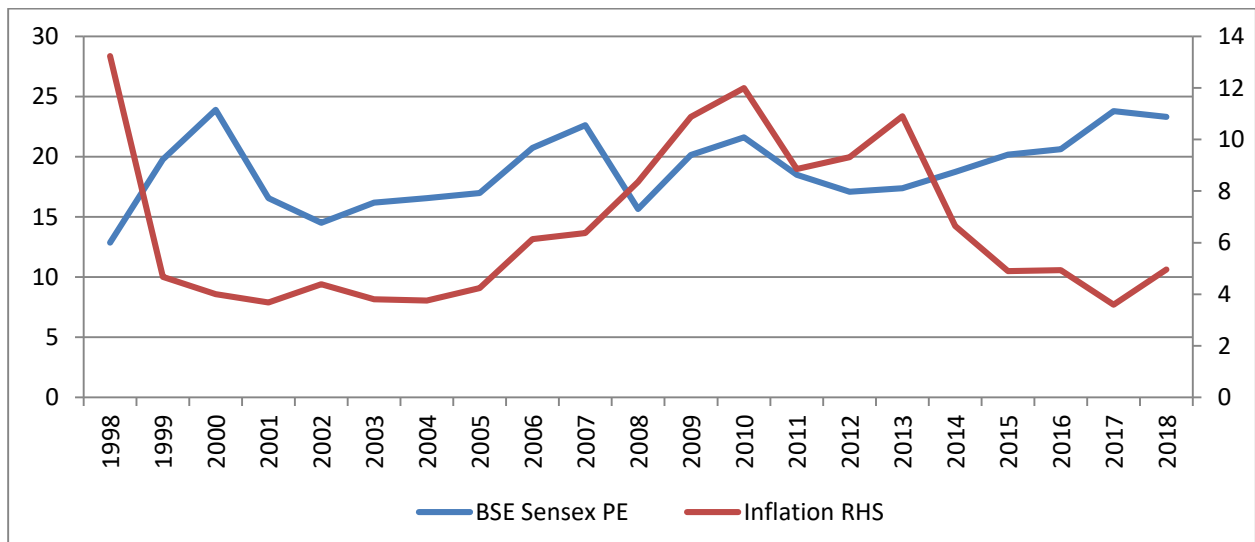


Figure 3 Inflation (%) and BSE Sensex P/E

At a glance, it looks as if the inflation rate has a relationship with the movement of stock market P/E multiplier, which follows the inflation tendencies. Inflation rate expectation are theoretically expected to influence the market evaluation of shares. A constant inflationary situation in an economy will be foreseen as a positive influence on the investors and, hence, market prices are likely to go up under such circumstances. Expected consumer price inflation for FY19 is 4.95% and in FY20 it is expected to be around 4.82%.

4) Interest Rates: Interest rate is the price of credit. It is the percentage fee received or paid by individuals or organizations when they lend or borrow money. Rising interest rates lead to a decline in bond prices and typically lead to a fall in share prices. When interest rates rise, investors' required rates of return on shares also rise, causing the current market prices of securities to fall. Rising interest rate make bond yields look more attractive relative to share dividend yields.

Bond interest rates move in tandem with the treasury rate; changes in bond rates often precede changes in the level of activity in financial markets.

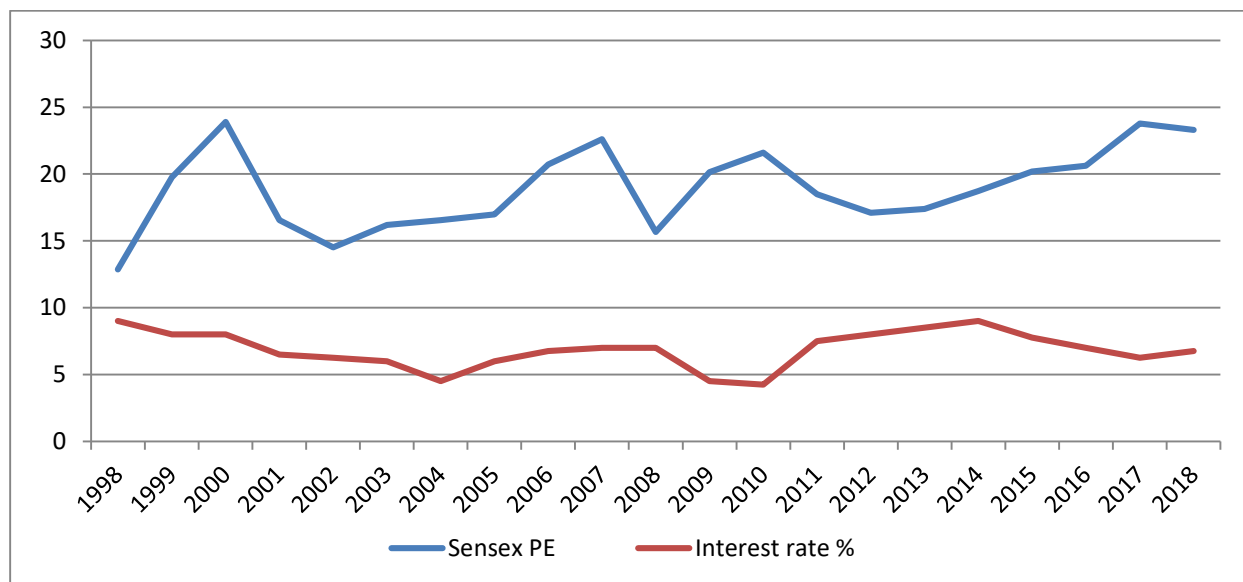


Figure 4 Interest rate (%) and capital market P/E

The movement of interest rate in India during 1998-2005 (Figure 4) was comparatively higher and led to fall in the growth rates of the capital market. Decline in interest rates after 1998 accompanied an increase in share movements. A further fall in interest is, most likely to influence an uptrend in the share market. Expected interest rate in India for 2019 is 6.75% and for 2020 is 5.75%.

5) International influences: Rapid growth in overseas market can create surges in demand for exports, leading to growth in export sensitive industries and the overall GDP. In contrast, the erection of trade barriers, quotas, nationalistic fervor and currency restrictions can hinder the free flow of currency, goods and services, in addition to harming the sector of an economy. one important measure

of the influence of international economies is the exchange rate- the rate at which one currency may be converted into another. It is also called as the rate of exchange, foreign exchange.

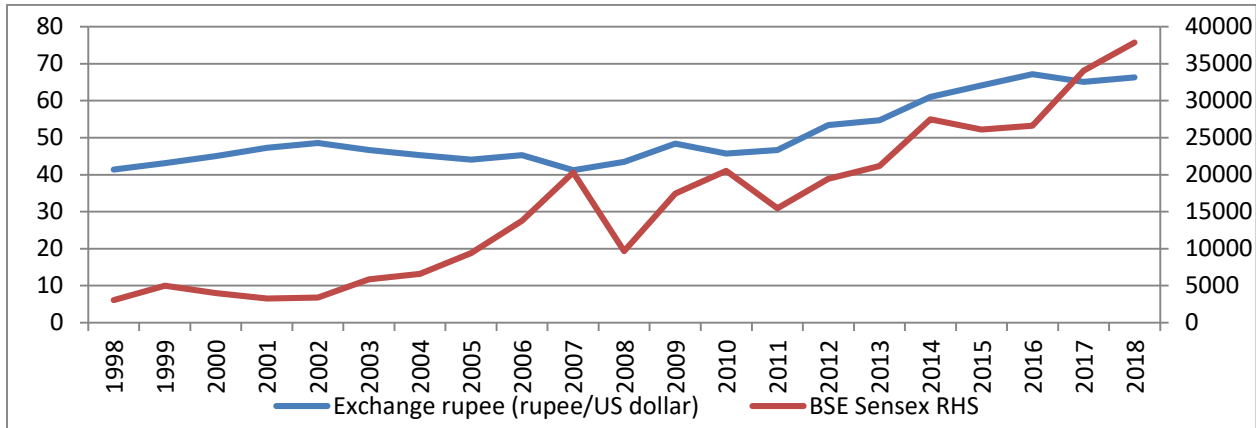


Figure 5 Exchange rate (rupee/US dollar) and BSE sensex movement

The movement of the rupee-dollar exchange rate (Re/\$) appears similar to the movement of the share market represented by the BSE Sensex as shown in Figure 5. A rising exchange rate also fuels the demand for securities in the capital market.

- 6) **Consumer Sentiment:** Variation in consumer sentiment will lead to alternating period of sales growth and decline for consumer oriented industries, particularly, manufacturers of consumer durables. It is also known that risk premiums are influenced by consumers and hence lead to change in investor attitude over the course of a business cycle. As a result, consumer sentiment can be expected to affect both cash flows (Higher/Lower sales and operating income) and the risk premiums on financial market investment.

- 7) **Fiscal Policy:** Decisions by a government, usually relating to taxation, and government spending with the goals of full employment, price stability and economic growth lead to a positive or negative outlook of the share market. Government expenditure may not have any direct impact on capital market growth in India as government expenditure shown a growth rate within a narrow band of 14-18.50 per cent between 1990 and 2010 whereas capital market growth has shown a wider fluctuation in its P/E multiplier, from 13 per cent to 41 per cent.

Comparison of corporate tax collection in India with share price movements indicates that a high tax collection is in tune with capital market movement, whereas a lower tax collection has resulted in a decrease in share price movements.

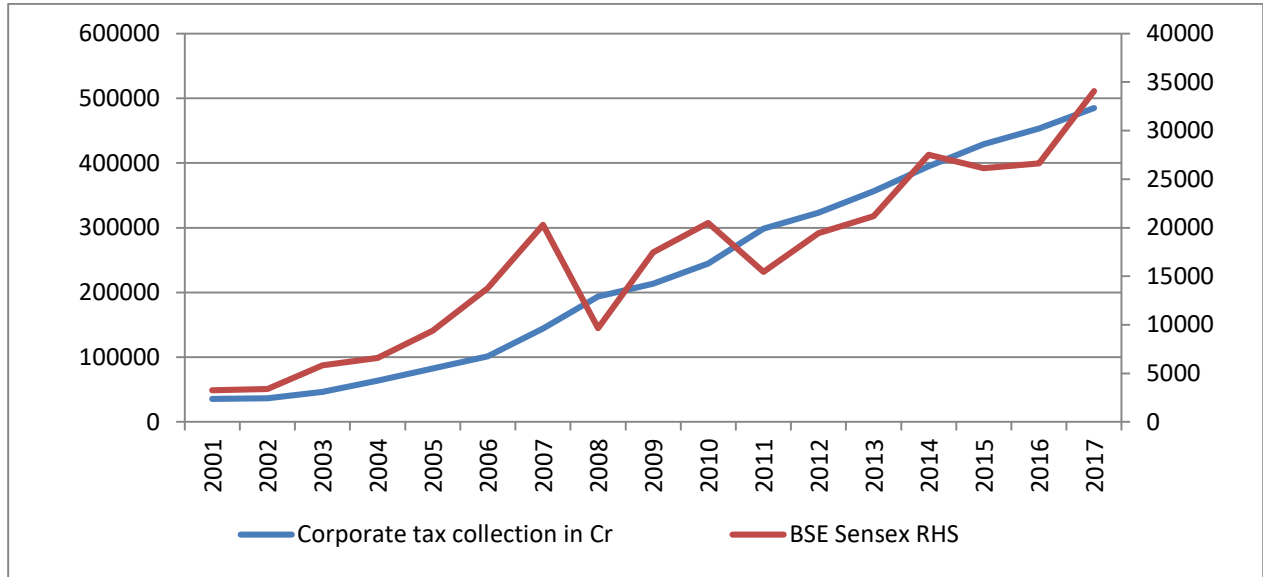


Figure 6 Corporate tax collection and BSE Sensex movement

The movement of BSE Sensex is in line with the increase in corporate tax collection therefore a direct link can be established between the domestic company that are listed on exchanges and the fiscal policy of the government.

8) Input factors to growth (Technology, Labour and capital): The long term growth path of an economy is determined by supply side factors. Growth will be constrained in the long run by limits in technology; size and training of the labour force; and availability of adequate resources and incentives to expand.

The Cobb Douglas production function that looks at the contribution of each factor input to long term growth is represented as follows:

$$Y = T \times L \times K \times E$$

Total output (Y) is equal to the product obtained by multiplying the contribution of technology (T), Labour (L), Capital (K) and other factors (E) to production.

- 1. Technology Effect:** Technology change is an important determinant of growth of output because it increases the productivity and efficiency of all other inputs to production.
- 2. Labour Effect:** Labour can be broken down into three factors; number of labourers, allocation of labour and increased education of labour force.

$$\begin{aligned} \text{Labour Effect} &= \text{Population} \times \text{Participation rate} \times \text{Average number of hours worked per} \\ &\quad \text{week} \times \text{Labour productivity} \\ &= P \times L_r \times HW \times LP \end{aligned}$$

A higher labour output leads to a positive movement of share price.

- 3. Capital Effect:** Capital formation is directly influenced by the rate of national savings. Private savings, including household and business savings, is equal to domestic investment. Capital effect can also be measured in terms of the net capital share held by the economy, determined by the quantum of capital employed in the economy; amount spent on technology and research-and-development; and industrial capacity utilization.
- 4. other contributing factors:** other contributors to the long term expectation are the prevalent economic mix (manufacturing versus service), energy availability, economic stability, foreign competition and incentives provided by a government. In addition, a country's politics, societal influences and demographics may also effect long-term growth expectation. Positive or negative changes in these factors may lead to changes in future economic growth.

9) **Business Confidence Index:** National Council of Applied Economic Research (NCAER) computes a BCI through a business expectation survey in India. NCAER construct a BCI based on the business perceptions of four indicator: current investment climate, current capacity utilization, overall economic conditions and financial performance of firms in the next six months. It also presents its forecasts of economic and industry performance for predicting the short term investment environment. Past record shows an unmistakable co-movement of the quarterly BCI index and the BSE Sensex averages, indicating that share markets do react to short term expectations of business. This is helpful for investors for short term investment gains.

As it is evident from analyzing the macroeconomic factors that economy is in good shape and it is going to grow thus automobile industry will have a positive impact.

4. INDUSTRY: INTRODUCTION TO AUTOMOBILE SECTOR

Auto industry is said to be the engine of growth in most developed countries, including in China and India today. Indian automobile industry which was at its nascent stage at the beginning of the 21st century has now turned into a colossal industry that contributes significantly to development and improvement of Indian Economy.

Contribution to GDP, industry GDP and manufacturing GDP :

1. 7.1% in GDP
2. About 26% of industry GDP
3. About 49% manufacturing GDP

The Indian auto industry became the 4th largest in the world with sales increasing 9.5 per cent year-on-year to 4.02 million units (excluding two wheelers) in 2017. It was the 7th largest manufacturer of commercial vehicles in 2017. 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. overall automobile exports from India grew at 6.86 per cent CAGR between FY13-18. In addition, several initiatives by the Government of India and the major automobile players in the Indian market are expected to make India a leader in the two wheeler and four wheeler market in the world by 2020.

Market Structure:

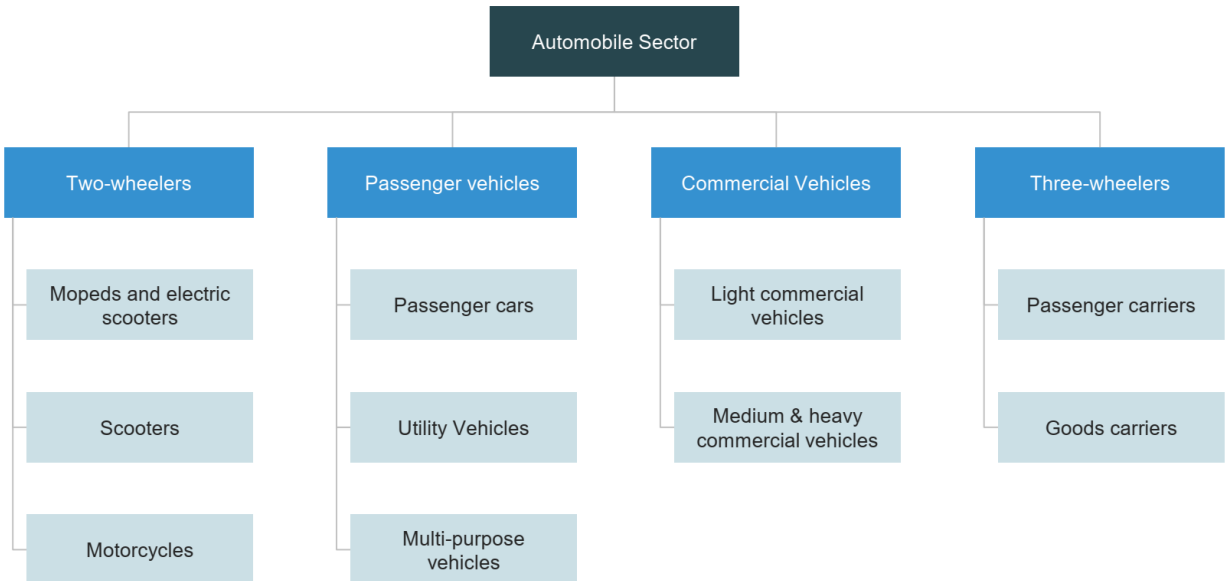


Figure 7 Market Structure of Automobile sector in India

Market Size: overall domestic automobiles sales increased at 7.01 per cent CAGR between FY13-18 with 24.97 million vehicles getting sold in FY18. The auto industry is set to witness major changes in the form of electric vehicles (EVs), shared mobility, Bharat Stage-VI emission and safety norms. Electric cars in India are expected to get new green number plates and may also get free parking for three years along with toll waivers. Sales of electric two-wheelers are estimated to have crossed 55,000 vehicles in 2017-18. Premium motorbike sales in India crossed one million units in FY18.

Investments: In order 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 has attracted Foreign Direct Investment (FDI) worth US\$ 18.413 billion during the period April 2000 to December 2017, according to data released by Department of Industrial Policy and Promotion (DIPP).

Some of the recent/planned investments and developments in the automobile sector in India are as follows: Ashok Leyland has planned a capital expenditure of Rs 1,000 crore (US\$ 155.20 million) to launch 20-25 new models across various commercial vehicle categories in 2018-19. Mahindra &

Mahindra (M & M) is planning to make an additional investment of Rs 500 crore (US\$ 77.23 million) for expanding the capacity for electric vehicles in its plant in Chakan.

Government Initiatives: The Government of India encourages foreign investment in the automobile sector and allows 100 per cent FDI under the automatic route. Some of the recent initiatives taken by the Government of India are - The Government of Karnataka is going to obtain electric vehicles under FAME Scheme and set up charging infrastructure across Bengaluru, according to Mr R V Deshpande, Minister for Large and Medium Industries of Karnataka.

The Ministry of Heavy Industries, Government of India has shortlisted 11 cities in the country for introduction of electric vehicles (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 startups working in electric vehicles space. Energy Efficiency Services Limited (EESL), under Ministry for Power and New and Renewable Energy, Government of India, is planning to procure 10,000 e-vehicles via demand aggregation, and has already awarded contracts to Tata Motors Ltd for 250 e-cars and to Mahindra and Mahindra for 150 e-cars.

The government is planning to set up a committee to develop an institutional framework on large-scale adoption of electric vehicles in India as a viable clean energy mode, especially for shared mass transport, to help bring down pollution level in major cities.

China, the largest EV and automobile market in the world, is obviously on the advantageous position. The country also has the fourth-largest cobalt reserve and houses one of the highest reserves of lithium in the world.

India has some great advantages in the changing automotive landscape but it has to overcome some serious challenges too. The country falls extremely behind in the lithium and cobalt reserves. It needs to speed up in securing lithium. What is rather detrimental is that it levies highest 28 per cent Goods and Service Tax (GST) on import of this crucial item. Argentina recently showed interest in helping India in providing lithium but we have not made any progress towards collaborating with

any country so far. The other important raw material is cobalt and its reserve is also extremely low, limited only in Nagaland, Jharkhand and orissa.

outlook: 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. Two-wheelers are expected to grow 9 per cent in 2018.

Gross Turnover of the Automobile Manufacturers in India (In USD Million):

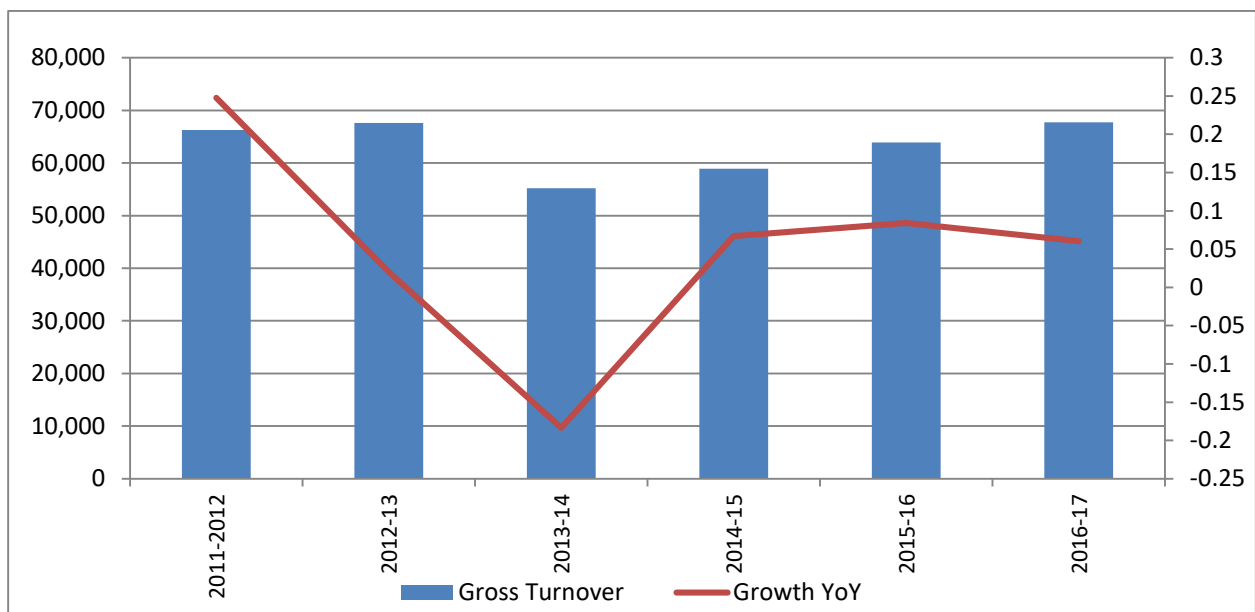


Figure 8 Gross turnover of automobile manufacturers in India and YoY growth

Installed Capacity:

	2015-2016	2016-2017
Four Wheelers	6.49	7
Two & Three Wheelers	26.14	27.56
Engines	1.02	1.02

Table 1 Installed capacity in India (In Million)

Domestic Market Share for 2017-18:

Domestic Market Share for 2017-18	
Passenger Vehicles	13%
Commercial Vehicles	3%
Three Wheelers	3%
Two Wheelers	81%
Grand Total	100%

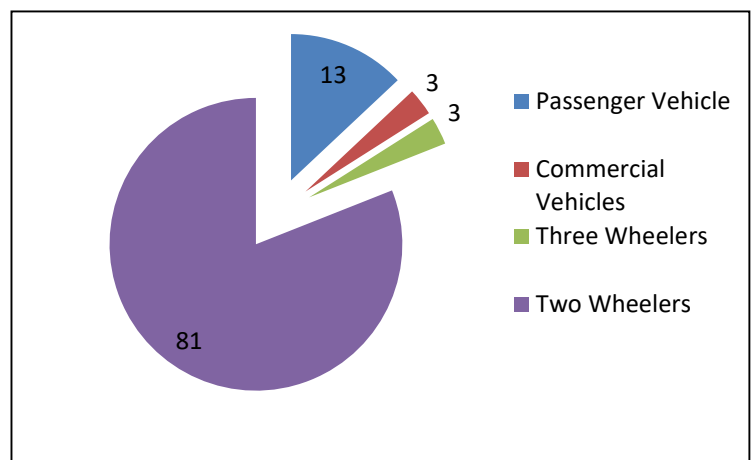


Table 2 Domestic Automobile Market Share

Figure 9 Domestic Market Share

Production Trend:

Category	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Passenger Vehicles	3,231,058	3,087,973	3,221,419	3,465,045	3,801,670	4,010,373
Commercial Vehicles	832,649	699,035	698,298	786,692	810,253	894,551
Three Wheelers	839,748	830,108	949,019	934,104	783,721	1,021,911

Two Wheelers	15,744,156	16,883,049	18,489,311	18,830,227	19,933,739	23,147,057
Grand Total	20,647,611	21,500,165	23,358,047	24,016,068	25,329,383	29,073,892

Table 3 Production trend in automobile sector (2012-2018)

Growth YoY in production trend:

Growth YoY	2013-14	2014-15	2015-16	2016-17	2017-18
Passenger Vehicles	-4.4%	4.3%	7.6%	9.7%	5.5%
Commercial Vehicles	-16.0%	-0.1%	12.7%	3.0%	10.4%
Three Wheelers	-1.1%	14.3%	-1.6%	-16.1%	30.4%
Two Wheelers	7.2%	9.5%	1.8%	5.9%	16.1%
Grand Total	4.1%	8.6%	2.8%	5.5%	14.8%

Table 4 Growth in production trend (2013-2018)

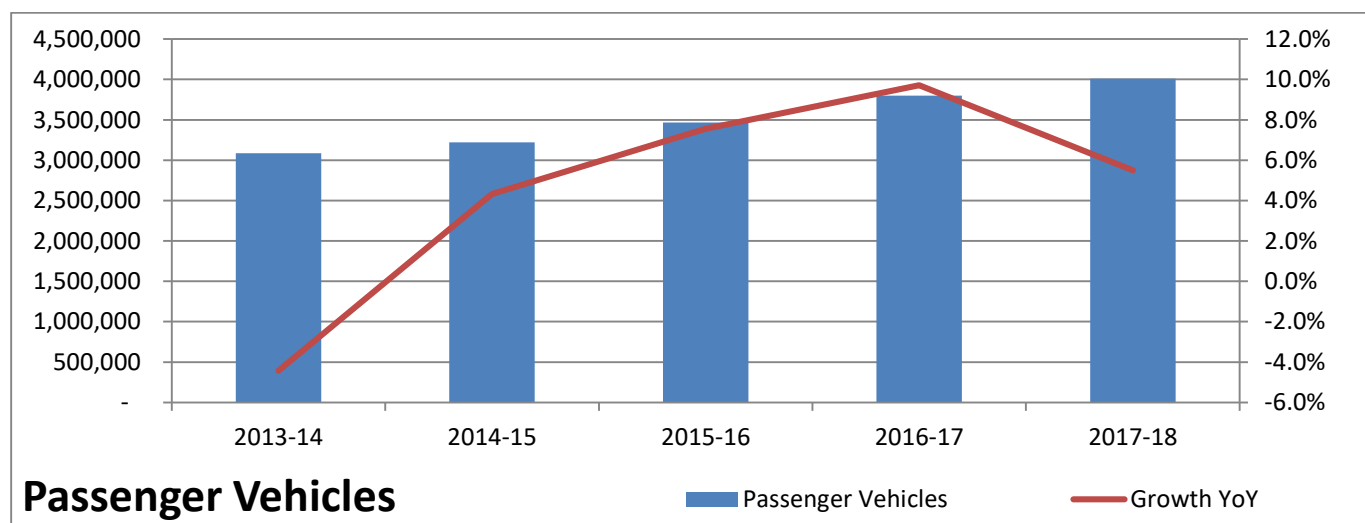


Figure 10 Passenger Vehicle production trend (2013-2018) and YoY growth

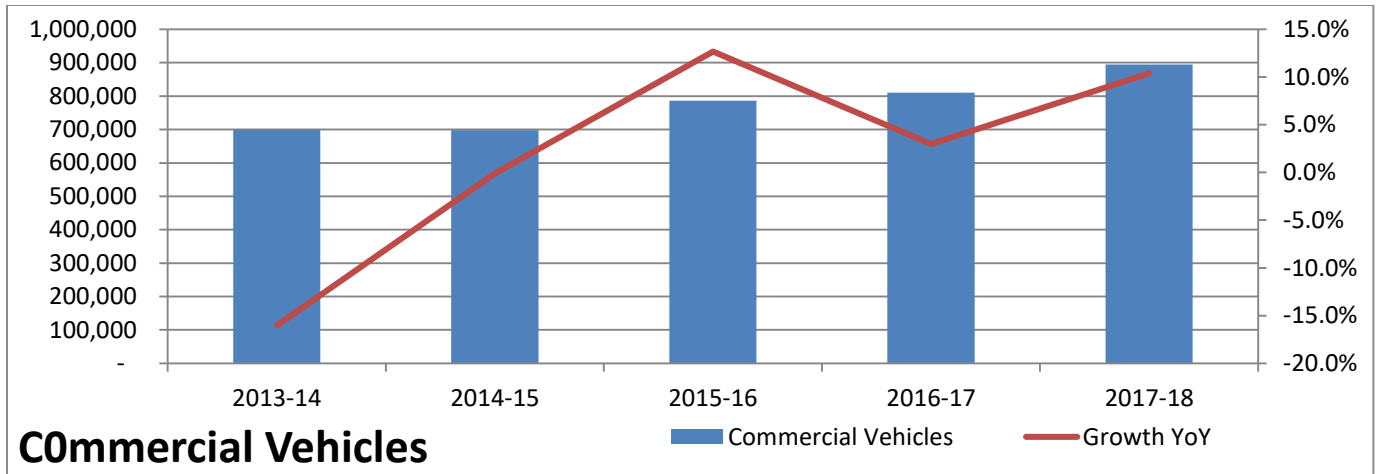


Figure 11 Commercial Vehicle production trend (2013-2018) and YoY growth

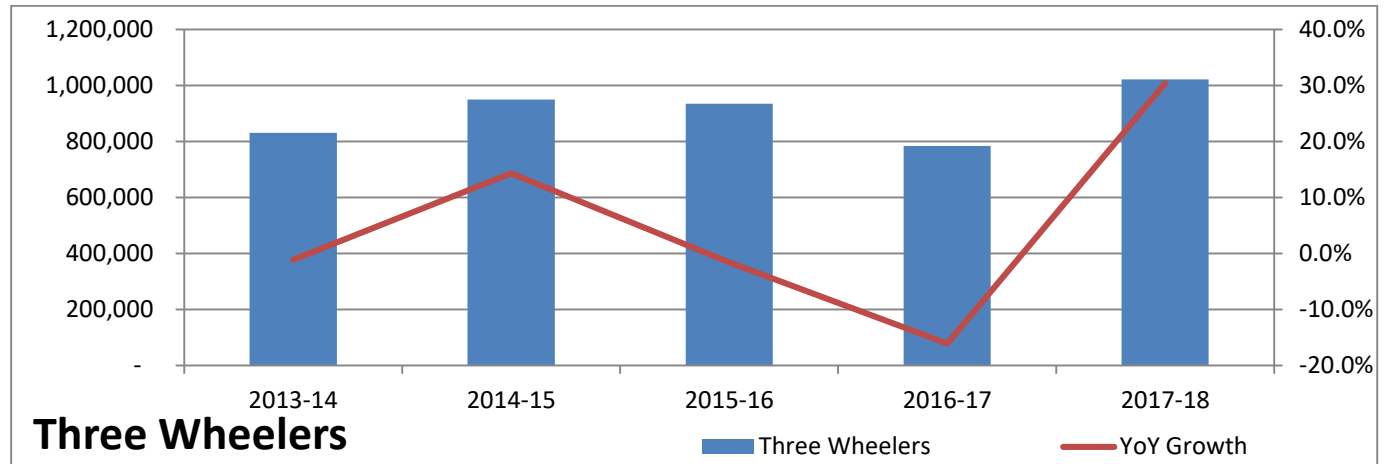


Figure 12 Three Wheelers production trend (2013-2018) and YoY growth

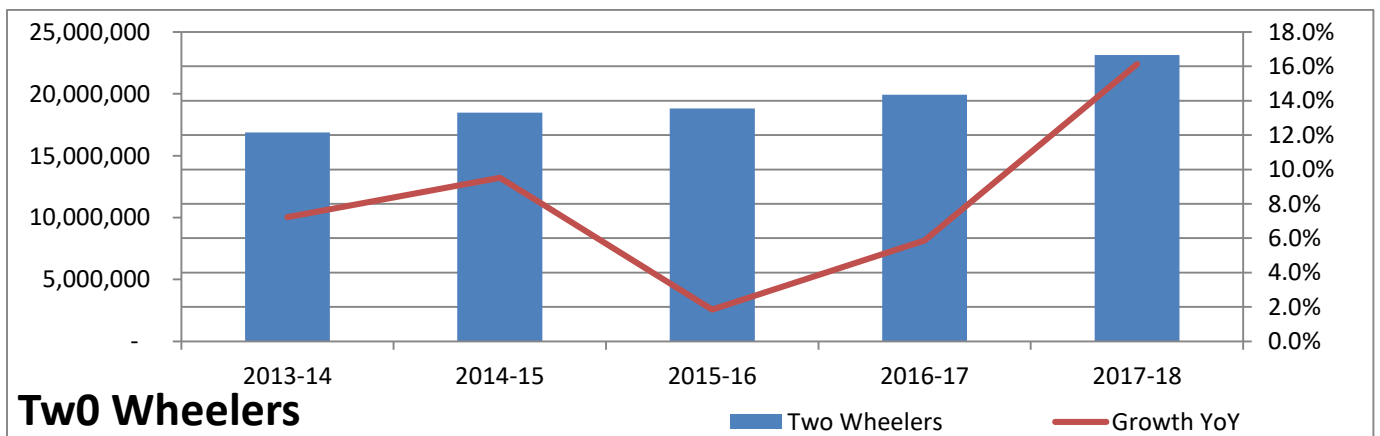


Figure 13 Two wheelers production trend (2013-2018) and YoY growth

Exports Trend:

Category	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Passenger Vehicles Exports	559414	596142	621341	653053	758727	747287
Commercial Vehicles Exports	80027	77050	86939	103124	108271	96867
Three Wheelers Exports	303088	353392	407600	404441	271894	381002
Two Wheelers Exports	1956378	2084000	2457466	2482876	2340277	2815016
Grand Total Exports	2898907	3110584	3573346	3643494	3479169	4040172

Table 5 Exports trend in Indian automobile sector

Sales trend:

Category	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Commercial	793,211	632,851	614,948	685,704	714,082	856,453
Three Wheelers	538,290	480,085	532,626	538,208	511,879	635,698
Two Wheelers	13,797,185	14,806,778	15,975,561	16,455,851	17,589,738	20,192,672
Grand Total	17,793,701	18,423,223	19,724,371	20,468,971	21,863,281	24,972,788

Table 6 Sales trend of automobile sector

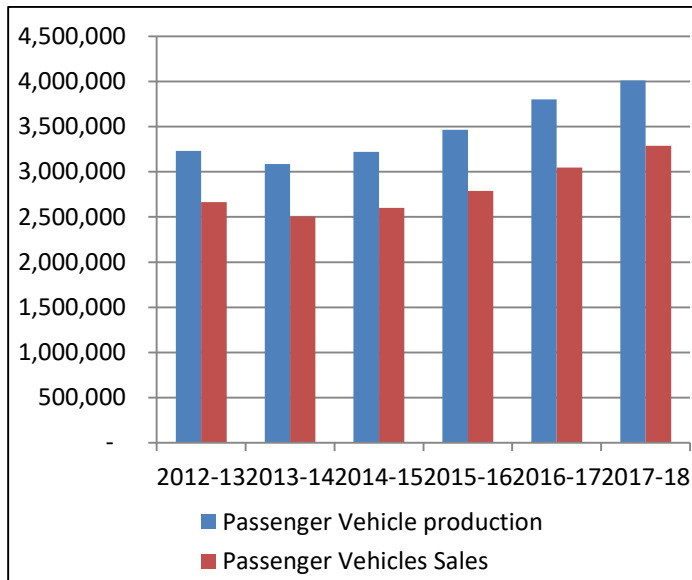


Figure 14 PV production and sales trend

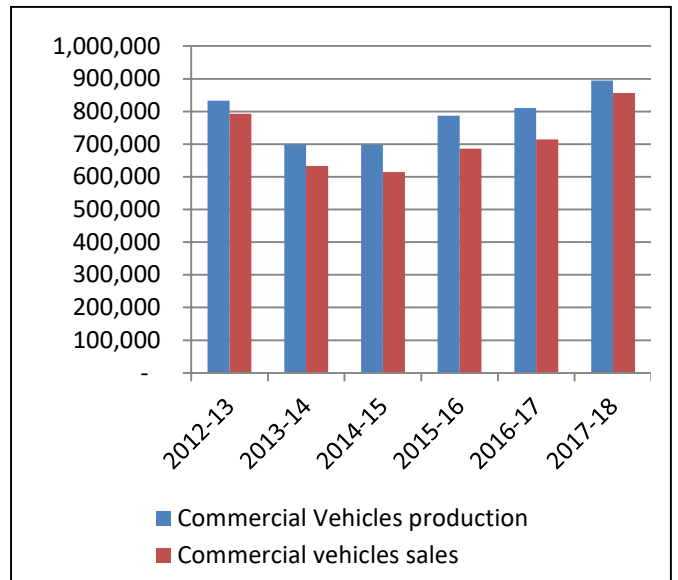


Figure 15 CV production and sales trend

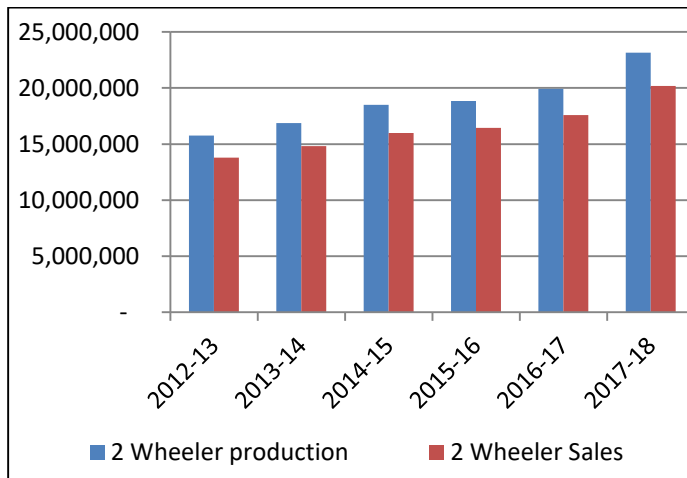


Figure 17 2Wheeler production and sales trend

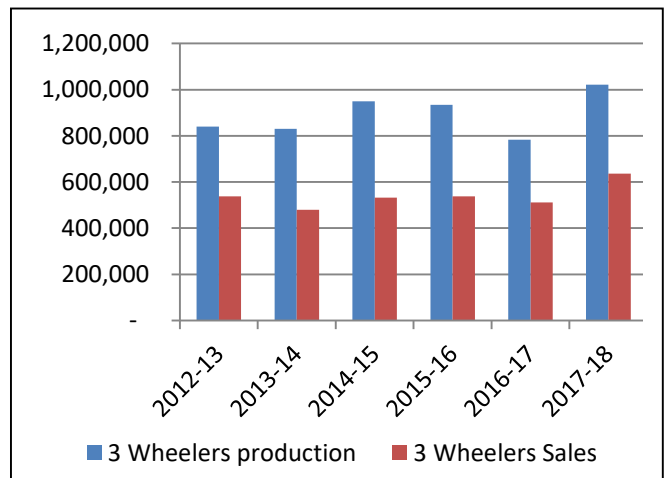


Figure 16 3Wheeler Production and sales trend

SWOT analysis of Automobile industry:

Strengths:

- **Economic growth:** Automobiles represent freedom and economic growth. Automobiles allow people to live, work and travel in ways that were unimaginable a century ago. Automobiles provide access to markets, to doctors, to jobs. Nearly every automobile trip ends with either an economic transaction or some other benefit to the quality of life.
- **Continuous product innovation & technological advancement:** With the advent of E-vehicles & alternative fuel such as Shell gas, CNG and others, Automobile Companies are increasing R & D expenditure to drive the next phase of growth through use of renewable sources of energy which may be solar, wind etc.
- **Growth shifting to Asian markets:** Although American & European market is the pulse of this Industry, but the focus is shifting to developing markets like China, India & other Asian nations because of the rise in disposable income, changing lifestyle & stable economic conditions.
- **Increasing demand of Value For Money vehicles:** Intense competition in the matured/developed markets has forced automobile manufacturers to target developing economies. But these developing economies have high demand for VFM products (value for money). In the automobile industry, VFM products would be fuel efficient, high mileage vehicles because majority of customers in these nations prefer vehicles for commuting. On the other hand, developed nations need is of vehicles for interstate travelling, and high speed vehicles suitable for long route with high engine power.
- **Increase in demand of luxury commercial vehicles:** Companies like Volvo, Daimler/Chrysler, Bharat Benz are betting high & are targeting the developing nations due to increase in demand of Luxury public transportation system.
- **Manufacturing facilities in Asian nations to control cost:** In order to control cost & to manage shrinking margins automobile companies like Harley, Volvo, Bharat benz etc. are building their manufacturing facilities in developing nations like India, China because these nations have cheap workforce, are high in resources & are nearer to developed economies. These are classic conditions of an emerging market.

Weaknesses

- **Cars recalled:** Controversies relating to recalling vehicles on account of some technical dis-functionality or non-abidance to govt. led rules is becoming very common.
- **Bargaining power of consumers:** over the last 3-4 decades the automobile market has shifted from demand to supply market. Availability of large number of variants, Stiff competition between them, and long list of alternatives to choose from has given power to customers to choose whatever they like.
- **Regulations:** Growth rate of Automobile industry is the in the hands of the government due to regulations like excise duty, no entry of outside vehicles in the state, decreasing number of validity of registration period & volatility in the fuel prices. These factors always affect the growth of the industry.

Opportunities:

- **Introducing fuel-efficient vehicles:** optimization of fuel-driven combustion engines and cost efficiency programs are good opportunities for the automobile market. Emerging markets will be the main growth drivers for a long time to come, and hence fuel efficient cars are the need of the hour.
- **Strategic Alliances:** Making strategic alliances can be a smart strategy for Automobile companies. By using specialized capabilities & partnering with other companies, they can differentiate their offerings.
- **Changing lifestyle & customer groups:** Three powerful forces are rolling the auto industry. Shift in consumer demand, expanded regulatory requirements for safety and fuel economy, and the increased availability of data and information. Also with the increase in nuclear families there has been increase in demand of two-wheelers & compact cars and this will grow further.
- **Market expansion:** Entering new markets like Asian & BRIC nations will result in upsurge in demand of vehicles. After these markets, other markets are likely to emerge soon.
- **OEM priorities:** Given the increase in electronic content, OEMs need to collaborate with suppliers and experts outside the traditional auto industry. Accomplishing this will require

changes in the way OEMs function. OEMs will be looking to their top suppliers to co-invest in new global platforms & this will be the driving force in the future.

Threats:

- **Intense Competition:** Presence of such a large number of players in the Automobile industry results into extensive competition, every company eating into others share leaving little scope for new players.
- **Volatility in the fuel Prices:** At least for the passenger segment fluctuations in the fuel prices remains the determining factor for its growth. Also government regulations relating the use of alternative fuels like CNG. Shell gas is also affecting the inventories.
- **Sluggish Economy:** Macroeconomic uncertainty, Recession, un-employment etc. are the economic factors which will daunt the automobile industry for a long period of time.
- **High fixed cost and investment in R & D:** Due to the fact that mature markets are already overcrowded, industry is shifting towards emerging markets by building facilities, R & D centers in these markets. But the RoI out of these decisions is yet to be capitalized.

KEY PLAYERS

Each segment in the Indian automobiles sector has few established key players which hold major portion of the market.

- **Maruti Suzuki India Limited:** Market leader in the passenger vehicles segment and held around 50 per cent market share in the segment in FY18. The company recorded its highest ever sales of 1,779,574 units during 2017-18, a year-on-year increase of 13.4 per cent. Total sales of the company in terms of volumes increased 19.9 per cent year-on-year in April-May 2018.
- **Tata Motors:** Market leader in the commercial vehicles segment held 44 per cent market share in FY18. overall sales of the company in terms of volume increased 58 per cent year-on-year in May 2018.
- **Hero MotoCorp and Honda** are the top two players in the two-wheelers segment, with market share of 37 per cent and 29 per cent, respectively in FY18.
- **Bajaj Auto** is a leader in three wheelers with 58.15 per cent market share in FY18. □ **Piaggio Vehicles** is the second leader in three wheelers with 24.05 per cent market share in FY18.

Conclusion :It is evident from analyzing the industry profile that investing in automobile sector will have capital appreciation for the next few years.

5. COMPANY ANALYSIS

out of various companies in automobile sector, three companies are selected randomly and are as follows:

1. Maruti Suzuki India Limited (Market leader in passenger vehicle segment)
2. Ashok Leyland (Pure-play CV player in India)

1) Maruti Suzuki India Limited:

Maruti Suzuki India Limited, formerly known as Maruti Udyog Limited, is an automobile manufacturer in India. It is a 56.21% owned subsidiary of the Japanese car and motorcycle manufacturer Suzuki Motor Corporation.

- A US \$ 12 billion (2016-17) company, having exports presence in Chile, Indonesia, Nepal, Sri Lanka and Bolivia.
- The Company's operational structure consists of manufacturing sites at Gurugram and Manesar with an installed capacity of 1.55 million vehicles per year. The Company achieved its highest ever sales of 1,779,574 vehicles in 2017-18.
- Maruti Suzuki has 1,820 sales outlets across 1,471 cities in India. The company aims to double its sales network to 4,000 outlets by 2020. It has 3,145 service stations across 1,506 cities throughout India.
- In 2015 Maruti Suzuki launched NEXA, a new dealership format for its premium cars. Maruti currently sells the Baleno, Baleno RS, S-Cross, Ciaz and Ignis through NEXA outlets. S-Cross was the first car to be sold through NEXA outlets. Several new models will be added to both channels as part of the Company's medium term goal of 2 million annual sales by 2020.
- Strong order backlog coupled with robust product pipeline to boost growth, Gujarat plant to reach Phase 1 full capacity of 7.5 Lakh units by the beginning of 2020.
- Maruti True service offered by Maruti Suzuki to its customers. It is a market place for used Maruti Suzuki Vehicles. one can buy, sell or exchange used Maruti or Non Maruti vehicles with the help of this service in India. As of 10 August 2017 there are 1,190 outlets across 936 cities.

- Maruti Finance-Strategic partnership with SBI in March 2003 and has sold over 12,000 vehicles through SBI-Maruti Finance. Citicorp Maruti Finance Limited is a joint venture between Citicorp Finance India and Maruti Udyog Limited for "hire-purchase financing of Maruti Suzuki vehicles".

Stock Details:

BSE Code	532500	52 Week High/ Low	9996.40/7475.10		
NSE Code	MARUTI	Stock Performance	3M	6M	12M
ISIN	INE585B01010	Absolute %	5.23	3.57	20.70
Market Cap	271,252.79 Cr	Face Value	Rs. 5		
No of Shares	302,080,060	CMP	Rs. 9149.50		

Table 7 Stock details of Maruti Suzuki India Limited

Shareholding pattern:

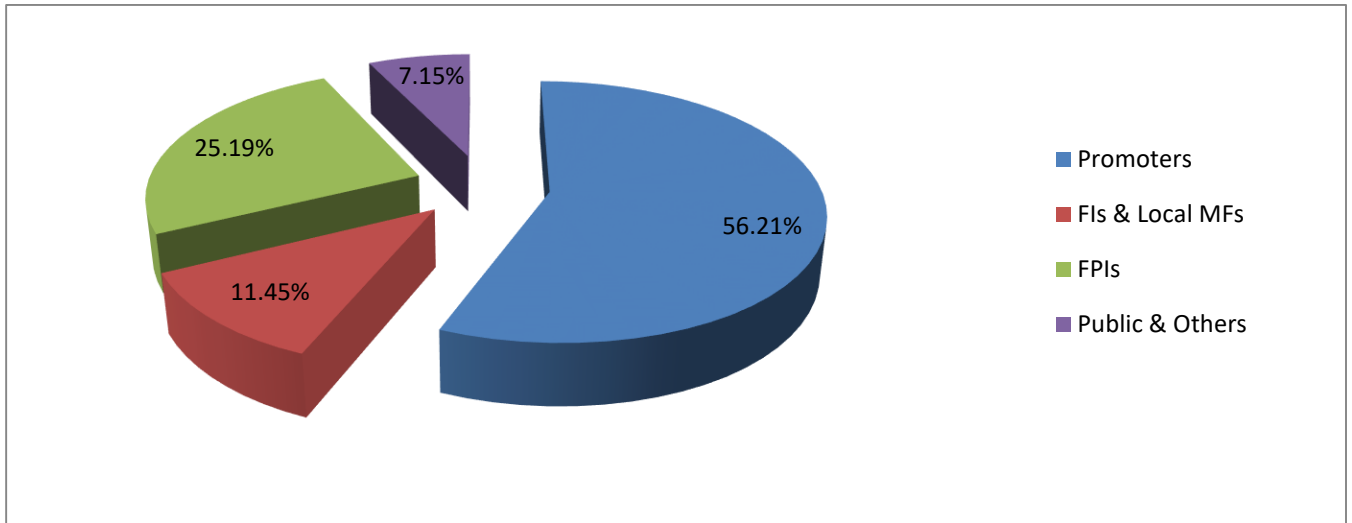


Figure 18 Shareholding Pattern of Maruti Suzuki India Limited

Maruti Suzuki movement with Nifty Auto Index:

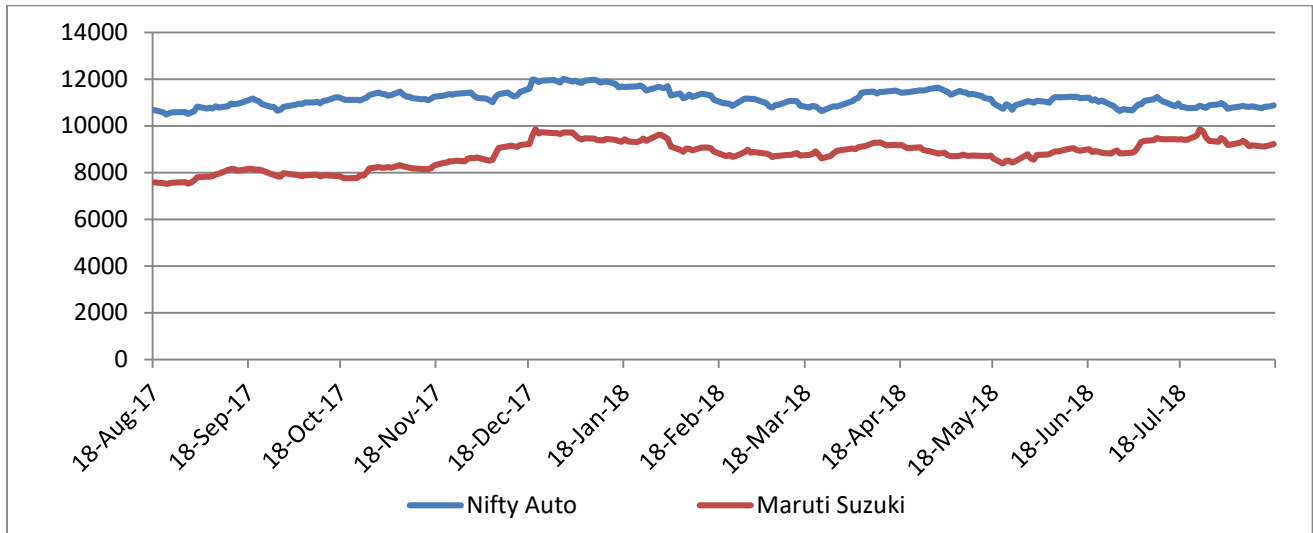


Figure 19 Maruti Suzuki movement with Nifty Auto

Highlights:

- Maruti Suzuki continues its strong domination on the Indian car market and sold a total of over 1.64 million vehicles in the domestic market bringing its market share very close to 50 percent. The company has not only managed to sustain its huge sales but have also increased its market share in both urban and rural buyers. New car launches like Maruti Suzuki Dzire, all-new Swift along with the constant demand of Maruti Suzuki Baleno and Vitara Brezza helped the company to achieve this huge growth.
- Maruti Suzuki Alto continues to remain the most sold car in India. The company also exported about 1.23 lakh units to its export markets. Maruti Suzuki's domestic sales jumped 36.3% to 144,981 units in June 2018 compared to a year ago, as the compact car segment led growth with a 76.7% jump to 71,570 units. The local arm of Japanese automaker Suzuki Motor Corp. continues to face robust demand for the next-generation Swift, premium hatchback Baleno and compact sedan Dzire in this segment.
- The utility vehicles segment, including the best-selling Vitara Brezza and S-Cross models, also contributed with a 39.2% rise in sales to 19,321 units over June last year. An automatic transmission variant of the Brezza was launched in May.

- old workhorses Alto and WagonR also contributed with a 15.1% rise in sales, a change from the declines in April and May. Sales of mid-sized sedan Ciaz continued to slow, declining 60% during the month.
- Light Commercial Vehicle-Super Carry sales jumped 689.3% to 1626 Units. Vans (omin, Eeco) also contributed with a 32.3% rise in sales with 12185 Units.
- Total Revenue from operations increased by 6.11% to 82041.1 Cr and PAT increased by 4.92% to 7880.7 Cr (FY18).

Road ahead:

- The company is aiming for selling 2 Million vehicles in FY20.
- Ramp-up of Gujarat plant is on track with the second line having capacity of 2.5 lakh units coming on stream in the beginning of 2019. With the third plant having capacity of 2.5 lakh units being operational by the beginning of 2020, MSIL will reach full capacity of 7.5 lakh units from Phase 1 in Gujarat.

JPY appreciation worries:

JPY appreciation to raise costs for MSIL: Japanese Yen (JPY) has been appreciating against the INR recently. JPY has appreciated by about 7% against the INR in the past six months. MSIL incurs royalty expenses payable to its parent in JPY terms. As per the agreement with the parent, royalty on all models introduced before Ignis is JPY denominated. Most models of MSIL, which is 60-65% of volumes come under JPY-denominated royalty structure. Royalty-related payments of MSIL, which are JPY denominated, form 3-3.5% of the turnover. overall, MSIL JPY exposure forms 13-14% of the topline and JPY appreciation against INR will increase input costs for MSIL.

Maruti Suzuki has announced to increase car prices in India effective from, August 16, 2018. The company has increased the price of its cars across the range by up to Rs 6,100 ex-showroom Delhi. This is the second price hike from the company this year, which previously announced a price hike in January this year ranging from Rs 1,700 to Rs 17,000 on the ex-showroom Delhi prices across

models. Revealing the reason for the price revision, Maruti Suzuki India said that the hike is due to the increase in commodity and distribution costs and adverse foreign exchange rates.

Industry sales data:

Industry Data	2015	2016	2017	2018	2019	2020
Domestic Sales	2,601,236	2,789,208	3,046,727	3,288,000	3,682,560	4,087,642
Exports	621,341	653,053	758,830	747,000	821,700	903,870
Total	3,222,577	3,442,261	3,805,557	4,035,000	4,504,260	4,991,512

Table 8 Industry sales data

As per the industry analysis, domestic sales is expected to grow at 12% and export sales is expected to grow at 10% in FY19 and 11% and 12% respectively in domestic and export during FY20.

Currently, MSIL has 50.3% market share in domestic sales and 16.9% in export sales thus we are assuming 51% market share in domestic sales and 16% market share in export sales in FY 19 and 50% market share in domestic sales and 16% market share in export sales during FY20.

Maruti Suzuki Sales Data:

	2015	2016	2017	2018	2019	2020
Domestic	1,170,702	1,305,351	1,444,541	1,653,500	1,878,106	2,043,821
Exports	121,713	123,897	124,062	126,074	131,472	144,619
Total	1,292,415	1,429,248	1,568,603	1,779,574	2,009,578	2,188,440

Table 9 Maruti Suzuki Sales Data

Sales structure of Maruti Suzuki:

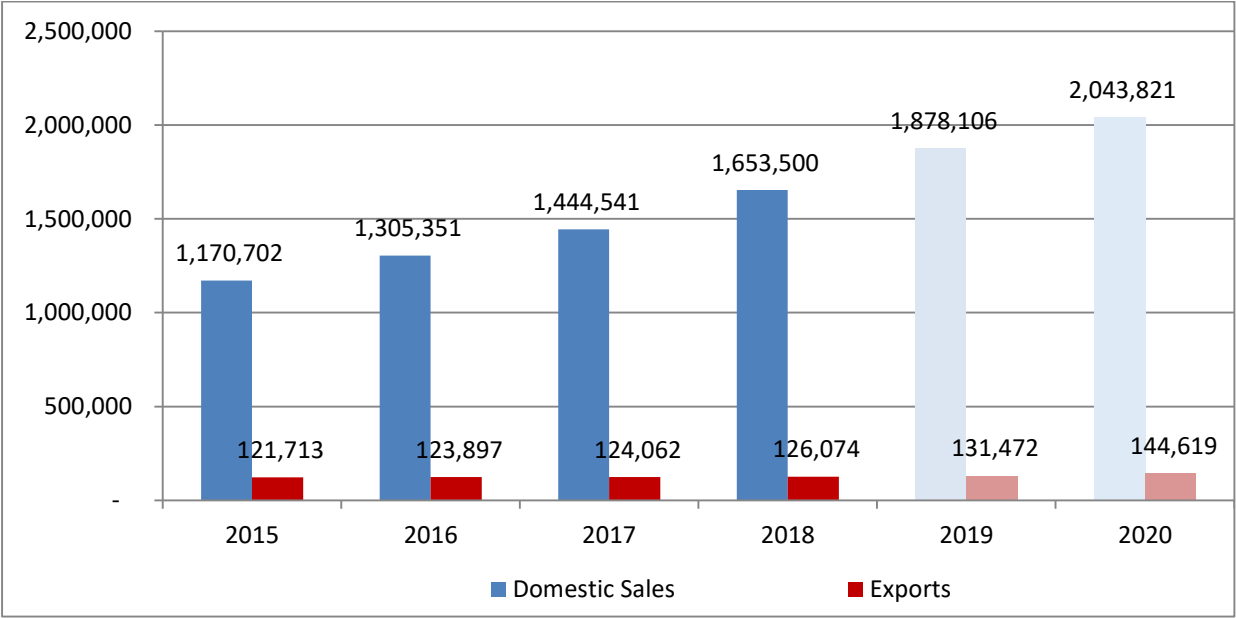


Figure 20 Sales structure of Maruti Suzuki

Based on the sales estimation a fully functional model is made (Refer excel file) and the following financial statements are obtained.

Balance Sheet:

INR Millions	2016	2017	2018	2019	2020
Sources of Funds					
Shareholder Funds					
Share Capital	1,510	1,510	1,510	1,510	1,510
Reserves & Surplus	304,650	369,241	424,084	523,170	634,411
Money Received against Warrants	-	-			
Minority Interest	144	154	161	161	161
Share Application Money Pending Allotment	-	-			
Long Term Liabilities					
Loans	-	-	100	100	100
Other Long Term Liabilities	8,075	11,055	15,859	15,859	15,859
Long Term Provisions	148	219	265	265	265
Deferred Tax Liabilities	2,287	5,058	6,020	6,020	6,020
Current Liabilities					
Tax Liabilities	7,956	8,036	8,541	10,127	11,580
Short Term Borrowings	774	4,836	1,108	1,314	1,502
Trade Payables	74,089	83,692	104,993	124,491	142,350
Other Current Liabilities	11,650	18,278	20,896	24,777	28,331
Short Term Provisions	3,994	4,498	5,609	6,651	7,605
Other Finance Liabilities	11,978	13,028	13,338	15,815	18,084
Total	427,255	519,605	602,484	730,259	867,778
Application Of Funds					
Long Term Assets					
Tangible Assets	121,827	129,377	130,771		
Intangible Assets	3,469	3,730	3,117	180,047	195,477
Capital Work in Progress	10,069	12,523	21,321	-	-
Intangible Assets Under Development	-	-			
Non-Current Investments	195,345	269,718	349,058	349,058	349,058
Other Financial Assets	234	241	328	328	328
Long Term Loans and Advances	4	3	2	2	2
Other Non Current Assets	16,796	16,033	18,587	18,587	18,587
Current Assets					
Inventories	31,326	32,637	31,602	36,906	41,118
Receivables	13,234	12,026	14,654	17,375	19,868
Cash & Bank Balances	507	235	740	91,913	203,873
Loans & Advances	31	25	30	36	41
Other Current Assets	16,611	15,408	13,140	15,580	17,815
Current Tax Asset	4,906	4,910	4,115	4,879	5,579
Investments	11,413	21,788	12,173	12,173	12,173
Other Financial Assets	1,483	951	2,846	3,375	3,859
Total	427,255	519,605	602,484	730,259	867,778

Figure 21 Balance sheet of Maruti Suzuki India Limited

Income Statement:

INR Millions		2016	2017	2,018	2,019	2,020
Revenue						
	Gross Revenue from operations	651,055	773,164	820,411		
	Excise Duty	75,165	92,314	22,317		
	Net Revenue from operations	575,890	680,850	798,094	946,307	1,082,060
	Other Income	14,806	22,896	20,458	20,000	20,000
Total Revenue		590,696	703,746	818,552	966,307	1,102,060
Costs						
	Raw Materials	354,833	426,279	449,432	532,895	609,342
	Purchases	32,179	44,936	100,021	118,596	135,609
	Changes in Stock in Trade	48	-3,793	408	484	553
	Employee Cost	20,003	23,603	28,634	34,598	39,938
	Other Expenses	80,542	87,280	99,956	112,875	122,921
	Own Use Vehicles	-602	-1,036	-991	-1,119	-1,219
Total Costs		487,003	577,269	677,460	798,329	907,145
Operating Profits		88,887	103,581	120,634	147,978	174,914
	Depreciation & Amortization	28,218	26,039	27,598	27,760	37,330
EBIT		60,669	77,542	93,036	120,218	137,584
	Interest	817	894	3,458	1,000	1,000
Profit Before Exceptional Items and T		74,658	99,544	110,036	139,218	156,584
Exceptional Items		-	-			
Profit Before Taxes		74,658	99,544	110,036	139,218	156,584
	Taxes	20,875	26,162	32,862	41,765	46,975
Profit Before Minority Interest and Sh		53,783	73,382	77,174	97,453	109,609
Share in Associates		1,189	1,728	1,633	1,633	1,633
Profit Before Minority Interest		54,972	75,110	78,807	99,086	111,242
Minority Interest						
Profit for the Year		54,972	75,110	78,807	99,086	111,242
EPS		182	249	261	328	368

Figure 22 Income statement of Maruti Suzuki India Limited

Interest in FY 18 is jumped to 3458 Millions due to one-off interest payment of ₹ 2548 Millions as part of enhanced compensation to landholders for company's freehold land at Manesar (Notes to

Accounts of annual report 2017-2018) and in estimation of interest in FY19 and FY 20 we expect it to be in the same lines as before FY18.

EPS for FY19 came out to be 328 and Rs for FY20 it came out as Rs 368.

Cash Flow for year 2019 and 2020:

INR Million	2018	2019	2020
Net Profit		99,086	111,242
Add Depreciation		27,760	37,330
Less Change in Working Capital		-16,925	-16,148
Less Capex		52,598	52,760
Add Change in Debt		-	-
Cash Flow		91,173	111,961
Opening Cash Flow		740	91,913
Closing Cash Flow	740	91,913	203,873

Figure 23 Cash Flow of Maruti Suzuki India Limited for year 2019-2020

Ratios:

INR Crore	2016	2017	2018	2019	2020
Profitability					
OPM	15.4%	15.2%	15.1%	15.6%	16.2%
NPM	9.5%	11.0%	9.9%	10.5%	10.3%
Return Ratios					
ROE	18.0%	20.3%	18.5%	18.9%	17.5%
ROA	14.2%	14.9%	15.4%	16.5%	15.9%
ROCE	18.6%	19.4%	20.4%	21.6%	20.5%
Stability Ratios					
Debt / Equity	0.03	0.03	0.04	0.03	0.03
Interest Coverage	74.26	86.74	26.90	120.22	137.58
Solvency Ratio					
Current Ratio	0.72	0.66	0.51	0.99	1.45
Quick Ratio	0.44	0.42	0.31	0.79	1.26
Turnover Ratios					
Receivable Turnover ratio	43.5	56.6	54.5	54.5	54.5
Inventory Turnover Ratio	18.4	20.9	25.3	25.6	26.3
Payable Turnover Ratio	7.8	8.1	7.6	7.6	7.6
Dupont Analysis					
ROE	18.0%	20.3%	18.5%	18.9%	17.5%
NPM	9.5%	11.0%	9.9%	10.5%	10.3%
Asset Turnover	1.35	1.31	1.32	1.30	1.25
Assets / Equity	1.40	1.40	1.42	1.39	1.36
Cash Conversion Cycle					
Receivable Days	8.4	6.4	6.7	6.7	6.7
Inventory Days	19.9	17.5	14.5	14.2	13.9
Payable Days	47.0	44.9	48.0	48.0	48.0
Cash Conversion Cycle	-18.72	-20.92	-26.86	-27.08	-27.45

Figure 24 Important ratios of Maruti Suzuki India Limited

Valuation of Maruti Suzuki India Limited Using DCF method (refer Excel file):

	2019	2020	2021	2022	2023
FCFE	91173	111963	130589	146819	177096
Growth rate		23%	17%	12%	21%

	2024	2025	2026	2027	2028	Terminal
FCFE	205431	225974	246312	266017	284638	4,650,729
Growth rate	16%	10%	9%	8%	7%	6%

Present value of cash flows:

2019	2020	2021	2022	2023
81,052	88,482	91,748	91,699	98,330

2024	2025	2026	2027	2028
101401	99158	96084	92251	1,521,517

Discount Rate	12.49%
Risk Free Rate	7.5%
Beta	0.95
Market Premium	5.25%
Present Values of the Cash Flows	(Sum of all cash flows 2019-2028) 2,361,721
Cash	(Investments +Non Current Investments+ Cash) 361,971
Total Equity Value	2,723,692
Number of Shares	302
Per Share Value	9,016
CMP	8988

Table 10 Valuation of Maruti Suzuki India limited using DCF method

However, The Company pays continuously increased amount of dividend to the shareholders i.e. 6.6% increase over last year. We can see a good rise in the Earnings per Share from 182 to 261 i.e 43.4% growth since 2016 (Figure 22). Marginal Difference in Return on Equity from 18% to 18.5% (Figure 24) and Book Value of the share grew by 21.3% in the last year. Thus, we expect the continuous rise in the FY2019 and FY2020.

By DCF valuation Maruti is trading at around fair value. Maruti Suzuki India is trading at 31x FY18 EPS and 27x FY19 EPS thereby valuing the stock at 28x FY20 EPS (Rs 10304).

2) Ashok Leyland Limited:

- Ashok Leyland, flagship of the Hinduja group, is the 2nd largest manufacturer of commercial vehicles in India, the 4th largest manufacturer of buses in the world, and the 12th largest manufacturers of trucks.
- A US \$ 3.2 billion (2016-17) company, and a footprint that extends across 50 countries, Ashok Leyland is one of the most fully-integrated manufacturing companies this side of the globe.
- Ashok Leyland has ISO/TS 16949 Corporate Certification and is also the first CV manufacturer in India to receive the OBD-II (on board diagnostic) certification for BS IV compliant commercial vehicle engines, SCR (selective catalytic reduction), iEGR (intelligent exhaust gas recirculation) and CNG technologies.
- Joint Venture with John Deere USA to seize the opportunities of the robustly growing construction equipment sector with products like Backhoe Loaders, Four-wheel-drive Loaders, Skid Steers and Excavators under both the Ashok Leyland and John Deere brands. Joint Venture with the Alteams Group, Finland, and is in the business of producing High Pressure Die Casting (HPDC) aluminum components pre-dominantly for telecommunications and automotive sectors.
- Subsidiaries- Albonair GmbH, Global TVS Bus Body Builders Limited, Hinduja Leyland Finance Limited, Hinduja Tech Limited which are involved in solution provider for reducing automotive emissions, solution provider for reducing automotive emissions bus body building in the Domestic, Gulf and African markets, to provide finance for the purchase of vehicles or equipment, to provide Engineering, Manufacturing, Information Technology and Enterprise Services and Solutions for Automotive, Aerospace, Defence, Industrial and General Manufacturing industries.

Stock details:

BSE Code	500477	52 Week High/ Low	167.50/ 100		
NSE Code	ASHOKLEY	Stock Performance	1M	3M	12M
ISIN	INE208A01029	Absolute %	(0.35)	(17.07)	21.60
Market Cap	357.75 Bn	Face Value	Re. 1		
No of Shares	2931 Mn	CMP	Rs. 128.05		

Figure 25 Stock Details of Ashok Leyland

Shareholding pattern:

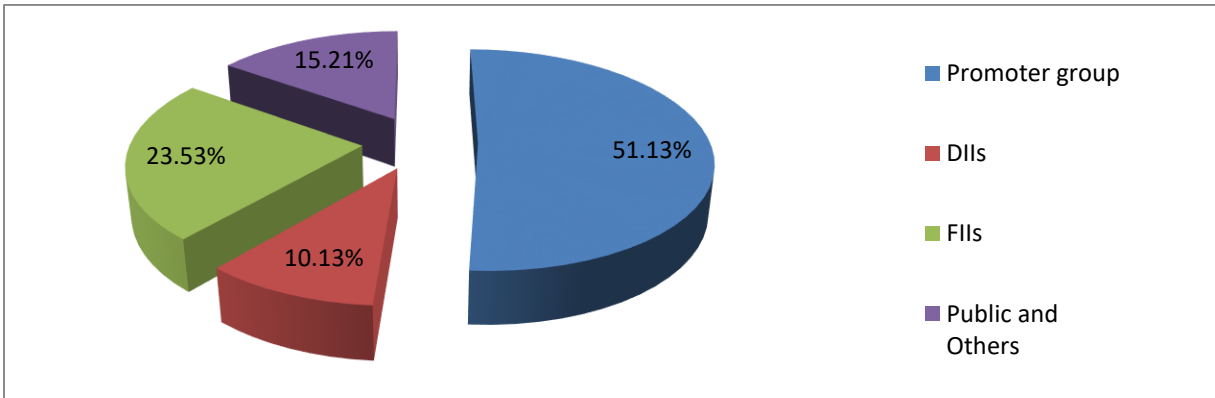


Figure 26 Shareholding pattern of Ashok Leyland Limited

Ashok Leyland movement with Nifty Auto Index:

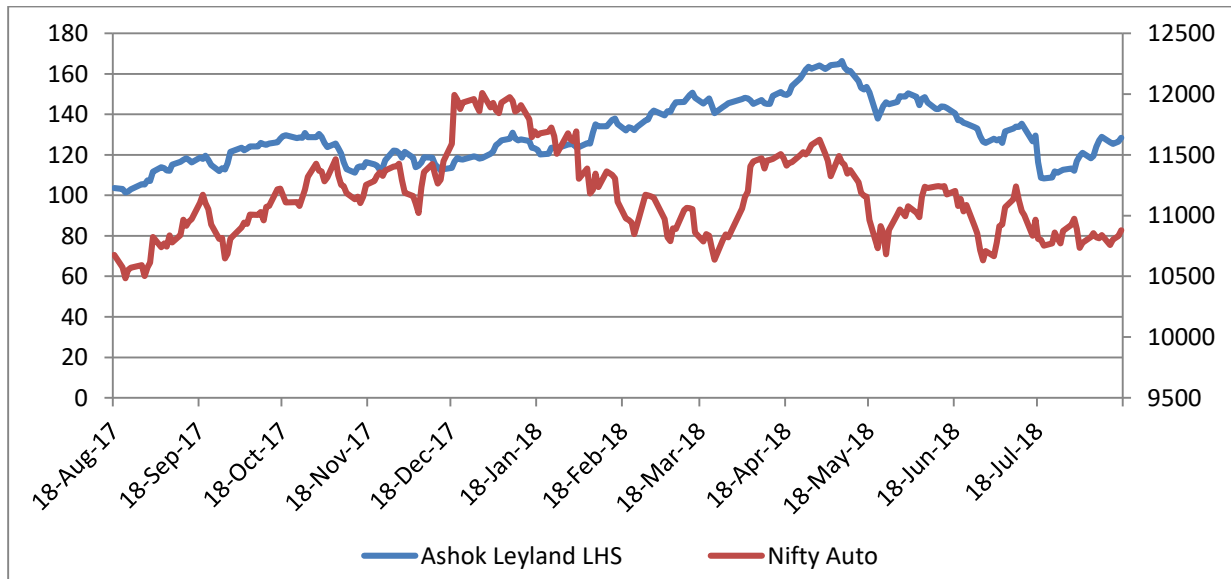


Figure 27 Ashok Leyland movement comparison with Nifty Auto

Road ahead:

- The company is looking at 10- 12% domestic industry growth for M&HCV in FY19. For FY20, Ashok Leyland expects significant pre-buying ahead of BSVI implementation from April 2020, as trucks could get expensive by up to Rs ~200k.
- Ashok Leyland's focus on new growth areas by growing share of LCVs, exports, spare parts and defense Aftermarket revenues (5% of sales) saw a healthy growth of 26%. The company expects 1 or 2% impact in overall volume from easing restriction in overload in UP and Rajasthan.
- In the M&HCV space, Ashok Leyland has lined up a series of new products—3718 Tipper, Boss 12T, 4932 – 49T truck, 4123– 41T lift axle and school buses.
- In the LCV segment, currently, ALs products are restricted to the 2.5-3.5 tonne range. It is looking to expand this range from 1.5 to 7.5 tonne, including the high selling 3.5 tonne pick-up segment.
- The company is aiming for capex of Rs. 4bn over next three years for a new LCV platform to launch new products.
- Ashok Leyland plans to invest Rs 10bn in FY19. out of which, 40% will be used for capacity related expansion and 60% will be used for R&D (BS6 technology and EV) and new product development. The company will be debottlenecking all its plants to solve the capacity constraints.

Highlights:

Q1FY19 performance: Revenue up by 47% to 6250 cr, however in Q1, AL underperformed industry growth as company did not participate in certain tenders due to aggressive pricing and AL lost ~4.5% overall market share. AL continues to not do deals at negative margin. Company will not sell below variable cost. However they are Investing in network and have Multiple ways to gain market share. Ashok Leyland's Q1FY19 results came in and Revenues came in at 6250 crore, (up 47.5% YoY). Total volumes increased 48% YoY to 42127 units, with M&HCV volumes increasing 54% YoY to 30647 units, while LCV volumes grew 33% YoY to 11481 units. EBITDA came @ 10.4 % for the current quarter as against, 7.2% (Rs. 648 cr vs Rs. 306 cr) in Q1 of previous year. Reported PAT came in at 370 crore (up 233% YoY).

New axle-load norms: If norms are applicable prospectively it would be better. If they are applicable retrospectively will cause issues like impact on safety. Vehicle will need to be engineered accordingly. Impact: Tippers, ICV, Bulklers (Cement), oil tankers, 2W carriers, car carriers are important categories. Tippers and ICV account for ~45% of volume and others ~10% to 15%. So, 55-60% volumes don't get impacted by norms as the load for these categories are also dependent on dimensions. Government has been stringent in policing over-dimensional vehicles. This had lead to automobile carriers to reduce their size. Currently, tippers are heavily overloaded. If government strictly monitors overloaded vehicles, demand for tipper will go up. Readiness: Predominantly, industry works on 10R20 tyres. Need 11R20, 295 size tyres for the new trucks and Need tubeless tyres for heavy applications. We believe there are two ways the change in norms can be implemented – an increase in axle load limits for all trucks, or only on new sales. Depending on the option the government chooses, we look at how the impact would play out:

1. If axle load limit of all operational trucks is increased
2. If axle load limit is increased only for new trucks.

1. If axle load limit of all operational trucks is increased:

Spot freight rates would soften: Large fleet operators, carrying dense bulk commodities, would be able to carry more freight, improving their margins. Contractual freight rates would remain resilient until the contracts are renegotiated The logistics costs of most companies will come off. This would be positive for infrastructure projects as moving cconstruction material to project sites would turn cheaper.

Competitiveness of small fleet operators would erode Small fleet operators would be impacted as efficiency gains from being able to carry more rated load per trip would be passed on through lower spot rates. Besides, the increase in the freight capacity would be less meaningful for intra-state movement where overloading is prevalent – much more than in inter-state movement. In select states in the north and the east, for instance, the move is only expected to make the current overloading legal. Thus there would be limited benefit for small fleet operators – it would, in fact, reduce their competitiveness.

Fleet utilisation would fall, impacting CV sales Increase in supply capacity (owing to the new norms) on trunk routes would lead to a reduction in fleet utilisation for large fleet operators, as they

would need fewer trucks to carry the same amount of load. Given this, these operators would halt fleet additions until utilisation reaches an optimal level. Sales of haulage trucks could fall, though tippers, which generally ply intra-state and tend to be overloaded, would be less impacted. Therefore, the tonnage segments on which the norm would be applicable would be a key monitorable.

Trend of shift to higher tonnage vehicles to subside Stricter implementation of overloading ban had led to tonnage shift to higher-tonnage segments such as 37T trucks and 49T T-trailer from 25T and 31T rigid trucks and 40T trailer. With the change in norms, this shift will subside.

2. **If axle load limit is increased only for new trucks:**

If only trucks sold after the implementation of the norm are eligible for the higher rated load, transporters could halt purchases of new trucks until the new norms become applicable and then replace as many of their existing fleet with new trucks with revised rated loads. This would lead to a surge in CV sales in the year of implementation of the norm.

With a large number of trucks being replaced, transporters will fetch lower resale value for the trucks that they would be selling, hampering their income. Besides, execution of this option would be difficult, given that it would be challenging to monitor overloading keeping an additional parameter of manufactured date as a criterion.

Considering the pros and cons of both these options, we believe the norms would be applicable to the population park. This is because, many old vehicles are being used for government projects, and with no material change in the axle on new trucks, limiting older vehicles with similar axles to a lower-rated load might not be acceptable to transporters

Modifications to vehicles: New norms will necessitate modifications to steering wheels, chassis, brakes and drive train apart from tyres. These will take time to incorporate. It will take about 3-4 weeks for design and another 3-4 weeks for approval, Upgrade will happen for vehicles. Not going to produce altogether new product. LCV segment: Revised loading norms not applicable here, Segment is doing well. FY18 PAT was positive, Gross margins better than M&HCV business.

Scrappage norms: It can be implemented in FY21 that may result in 200k-300k unit demand can come in due to these post the BSVI pre-buy in FY20. This will give visibility to FY21 demand.

Capex: FY19 capex estimated at INR10bn to be spent predominantly for LCV business, electric vehicles, modular vehicle program, regular maintenance capex and likely investments in subsidiaries. optare (Subsidiary) may require some funding (6-8mn GBP). AL doesn't foresee major fund infusion in other subsidiaries. Bus facility – putting it up in Andhra. Debottlenecking and modular manufacturing will help get 10-20% more capacity ~220k total annual capacity excluding LCV) without much significant chunky capex.

Impact: We expect volumes to remain soft for Q2FY19 and Q3FY19. Accordingly, we revise our volume downwards to 196337 units in FY19 and 219898 units in FY20. If this notification is on new trucks, then in the longer term it would have a positive impact, as the economics of owning a new truck will be favourable for a fleet operator. If it applies to older trucks, then fleet operators will not defer their purchase decision and buy older trucks as they will be available at lower cost. However, this will come at the cost of road safety and raise confusion about certification of these vehicles. Still, if applied retrospectively, the notification will result in stricter implementation of overloading ban. Hence, this will have a positive impact on CV demand.

Industry sales data:

Commercial Vehicles	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Domestic Sales	7,93,211	6,32,851	6,14,948	6,85,704	7,14,082	8,56,453
Export Sales	80,027	77,050	86,939	1,03,124	1,08,271	96,867
Grand total	8,72,238	7,09,901	7,01,887	7,88,828	8,22,353	9,53,320

Table 11 Industry sales data of Commercial vehicles

Industry sales is expected to rise at ~12% reaching at a grand total of 1067719 units in FY19.

Ashok Leyland market share is 18.55% in FY 18 and assuming to remain the same in next fiscal years due to high competition from Tata motors and other players.

Ashok Leyland sales data:

Commercial Vehicles	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Domestic sales	60,342	77,660	1,09,762	1,13,315	1,33,439	1,49,217	1,71,520
Export sales	28,995	27,242	30,695	31,770	43,441	47,120	48,377
Grand total	89,337	1,04,902	1,40,457	1,45,085	1,76,880	19,337	2,19,897

Table 12 Ashok Leyland sales data

Based on the above estimates a fully functional valuation model is made and following projected financial statements are obtained.

Income Statement:

INR Lakhs		2016	2017	2018	2019	2020
Revenue						
	Gross Revenue from operations	2,231,957.9	2,406,835	2,990,109		
	Excise Duty	105,968	131,886	28,152		
	Net Revenue from operations	2,125,990	2,274,949	2,961,957	3,501,477	4,156,954
	Other Income	13,069	13,069	19,988		
Total Revenue		2,139,059	2,288,018	2,981,945	3,501,477	4,156,954
Costs						
	Raw Materials	1,282,194	1,406,956	1,731,771	2,037,602	2,430,451
	Purchases	161,603	140,362	75,050	88,303	104,834
	Changes in Stock in Trade	-46,418	-73,947	114,986	135,293	160,620
	Employee Cost	171,067	185,000	225,748	265,615	315,338
	Other Expenses	259,651	299,332	389,559	462,679	554,474
Total Costs		1,828,097	1,957,703	2,537,113	2,989,492	3,565,717
Operating Profits		297,893	317,246	424,844	511,986	591,237
	Depreciation & Amortization	52,394	57,279	64,589	77,033	91,453
EBIT		245,499	259,967	360,255	434,953	499,784
	Interest	92,505	104,880	123,172	149,492	177,665
	Profit Before Exceptional Items and Taxes	166,063	168,156	257,071	285,461	322,118
	Exceptional Items	-41,137	2,469	-	-	-
	Profit Before Taxes	124,926	170,626	257,071	285,461	322,118
	Taxes	49,657	19,612	75,112	85,638	96,636
	Profit Before Minority Interest and Share in Associate	75,269	151,014	181,959	199,823	225,483
	Share in Associates	-7,849	-987	657	657	657
	Profit Before Minority Interest	67,419	150,027	182,616	199,166	224,826
	Minority Interest	3,024	4,355	5,344	5,344	5,344
Profit for the Year		64,396	145,672	177,272	193,822	219,483
EPS		2.26	5.12	6.06	6.62	7.50

Figure 28 Income statement of Ashok Leyland

Balance sheet:

INR Lakhs	2016	2017	2018	2019	2020
Sources of Funds					
Shareholder Funds					
Share Capital	28,459	28,459	29,271	29,271	29,271
Reserves & Surplus	497,911	610,836	712,788	906,610	1,126,093
Money Received against Warrants	-	-			
Minority Interest	41,729	58,899	82,533	84,648	32,252
Share Application Money Pending Allotment	-	-			
Long Term Liabilities					
Loans	752,711	887,642	1022809	1,254,464	1,490,877
Other Long Term Liabilities	21,201	9,456	24,067	29,518	35,081
Long Term Provisions	20,769	18,916	31,332	38,429	45,671
Deferred Tax Liabilities	32,910	12,693	29,851	36,611	43,511
Total Non current Liabilities	827,591	928,707	1,108,059	1,359,022	1,615,140
Current Liabilities					
Tax Liabilities	97	575	1,234	1,416	1,701
Short Term Borrowings	107,268	103,471	191,920	220,289	264,535
Trade Payables	270,112	345,015	507,465	582,476	699,471
Other Current Liabilities	67,625	71,804	128,108	147,044	176,579
Short Term Provisions	20,087	34,935	61,289	70,348	84,478
Other Finance Liabilities	358,972	484116.8	529,133	607,347	729,338
Total current liabilities	824,161	1,039,917	1,419,148	1,628,920	1,956,103
Total	2,219,851	2,666,817	3,351,799	4,008,472	4,758,858
Application Of Funds					
Long Term Assets					
Tangible Assets	469,274	507,223	506,947		
Intangible Assets + Goodwill	119,705	151,856	152,667		
Capital Work in Progress	6,626	19,592	25,111		
Intangible Assets Under Development	2,111	4,827	18,831	651,413	609,960
Non-Current Investments	76,697	84,521	96,684	81,731	106,983
Other Financial Assets	16,466	17,802	18,044	15,253	19,966
Long Term Loans and Advances	570,543	670,186	993,569	839,911	1,099,404
Other Non Current Assets	71,541	94,529	97,790	82,667	108,207
Total Non Current Assets	1,332,961	1,550,535	1,909,643	2,265,725	2,723,019
Current Assets					
Inventories	192,233	290,103	220,769	266,784	311,651
Receivables	146,138	123,840	117,550	142,051	165,941
Cash & Bank Balances	171,652	106,361	123,051	148,698	173,706
Loans & Advances	277,204	413,299	511,799	618,474	722,487
Other Current Assets	56,518	32,161	81,600	98,608	115,192
Investments	26,411	108,811	341,574	412,769	482,188
Other Financial Assets	16,734	41,708	45,813	55,362	64,673
Total Current Assets	886,890	1,116,283	1,442,156	1,742,747	2,035,839
Total	2,219,851	2,666,817	3,351,799	4,008,472	4,758,858

Figure 29 Balance sheet of Ashok Leyland

Cash flow:

INR Lakhs	2018	2019	2020
Net profit		193822	219483
Add Depreciation		77033	91453
Less change in working Capital		-6023.857	-128517
Less Capex		50000	50000
Add Change in Debt		231655	236413
Div		432886	600857
Cash Flow		25647	25008
Opening cash flow		123051	148698
closing cash flow	123051	148698	173706

Figure 30 Cash flow of Ashok Leyland for 2019-2020

Ratios:

INR Crore	2016	2017	2018	2019E	2020E
Profitability					
OPM	14.0%	13.9%	14.3%	14.6%	14.2%
NPM	3.0%	6.4%	6.0%	5.5%	5.3%
Return Ratios					
ROE	12.2%	22.8%	23.9%	20.7%	19.0%
ROA	11.1%	9.7%	10.7%	10.9%	10.5%
ROCE	13.9%	12.2%	14.4%	14.3%	13.6%
Stability Ratios					
Debt / Equity	1.51	1.43	1.45	1.41	1.36
Interest Coverage	2.65	2.48	2.92	2.91	2.81
Solvency Ratio					
Current Ratio	1.08	1.07	1.02	1.07	1.04
Quick Ratio	0.84	0.79	0.86	0.91	0.88
Turnover Ratios					
Receivable Turnover ratio	14.5	18.4	25.2	24.6	25.1
Inventory Turnover Ratio	11.1	7.8	13.4	13.1	13.3
Payable Turnover Ratio	7.9	6.6	5.8	6.0	5.9
Dupont Analysis					
ROE	12.2%	22.8%	23.9%	20.7%	19.0%
NPM	3.0%	6.4%	6.0%	5.5%	5.3%
Asset Turnover	0.96	0.85	0.88	0.87	0.87
Assets / Equity	4.22	4.17	4.52	4.28	4.12

Figure 31 Important ratios for Ashok Leyland

Valuation of Ashok Leyland (Refer Excel file):

Market premium	5.50%
risk free rate	7.50%
Beta	1.32
Terminal growth rate	3%
Discount rate	14.8%
Cash	561,308.75
Sum of PVs of cash flows	4657598
Total equity value	5,218,906.33
No of shares	29310
Per share value	178.06
CMP	128.35

Table 13 Valuation of Ashok Leyland

Relative Valuation:

P/E Multiple: Ashok Leyland current market price is Rs 128.35 (P/E= 21.17) which is trading at a PE multiple of 19.38x FY19 EPS and at a PE multiple of 17.11x FY20 EPS whereas industry (Nifty Auto) PE is 30.03 thereby calculating fair share value by multiplying industry PE with the earnings (FY18 EPS=6.06) of Ashok Leyland we get the value as **182**.

P/BV Multiple:

Book Value = shareholders capital/ No of shares

Book Value = (712788 + 29271)/ 29310

= 742059/29310

Book Value = 25.31

Price of Ashok Leyland = 128.35

P/BV = 128.35/25.31

$$P/BV = 5.07$$

Whereas P/BV of Industry (Nifty Auto) is 5.58, thereby calculating fair price as follows:

$$= 5.58 \text{ (P/BV of Industry)} \times 25.31 \text{ (BV of Ashok Leyland)}$$

$$= 141.22 \text{ (By considering current BV, FY18)}$$

Forward Book value of Ashok Leyland (FY19):

$$= (906610 + 29271)/29310$$

$$= 31.93$$

Calculating fair price:

$$= 5.58 \text{ (P/BV of Industry)} \times 31.93 \text{ (BV of Ashok Leyland FY19)}$$

$$= \mathbf{178.16}$$

EV/EBITDA Multiple:

EV = Market Capitalisation + Value of debt + Minority interest – cash – Investment

$$\text{EV (Ashok Leyland)} = 3761939 + 1022809 + 82532 - 123051 - (341574 + 96684)$$

$$= 4305971$$

$$\text{EBITDA} = 424844$$

$$\text{EV/EBITDA} = 4305971/424844$$

$$= 10.13 \text{ (EV/EBITDA of Ashok Leyland)}$$

$$\text{EV/EBITDA of Industry} = 14.26$$

Calculating fair Enterprise value:

$$= 14.26 \times 424844$$

$$= 6058275.44$$

Now deducting value of debt, adding cash and equivalent and adding investments to the fair EV to get the market capitalization:

$$= 6058275.44 - 1022809 - 82532 + 123051 + 341574 + 96684$$

$$\text{Market capitalization} = 5514243.44$$

Fair share value = Market Capitalisation/ No. of shares

$$= 5514243.44/29310$$

$$= \mathbf{188.13} \text{ (Fair share value calculated by EV/EBITDA valuation method)}$$

As different methods are applied to arrive at a target price, we may take an average of these prices and reach at price near 180, we value Ashok Leyland at **Rs 180** (24x FY20 EPS).

4. Conclusion and recommendation

1. Maruti Suzuki India limited:

RSI and MACD is showing positive signals and by DCF valuation Maruti is trading at around fair value. Maruti Suzuki India is trading at 31x FY18 EPS and 27x FY19 EPS thereby valuing the stock at 28x FY20 EPS (Rs 10304) for the period of one year as Elliot wave strongly suggest level above 10200.

2. Ashok Leyland Limited:

As different methods are applied to arrive at a target price, we may take an average of these prices and since by fundamental methods and technical indicators are showing price near 180, we value Ashok Leyland at **Rs 180** (24x FY20 EPS).

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