# Project Dissertation Report on

# FACTORS AFFECTING VALUATION OF A COMPANY: A CASE STUDY ON TYRE INDUSTRY

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## CERTIFICATE

This is to certify that **Prerna Raitani**, a student of MBA from Delhi School of Management, Delhi Technological University has submitted a Research Project on the topic **'Factors Affecting Valuation of a Company: A case study on Tyre Industry'.**

During the project, I found her to be very hardworking, sincere and inquisitive to explore new things. She is able to get across her points effectively and convincingly. She has the ability to withstand stressful project conditions and meet the deadlines.

I wish her all the success in her career and life.

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## DECLARATION

I, Prerna Raitani, student of MBA 2017-19 of Delhi School of Management, Delhi Technological University, hereby declare that Major Research Project on **"Factors Affecting Valuation of a company: A case study on Tyre Industry."** submitted in partial fulfillment 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 Degree, Diploma and Fellowship.

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**ACKNOWLEDGEMENT**

This Research has been a successful one because of effort and support of a lot of people at all ends. A deep sense of gratitude is owed to Dr. Sonal Thukral (Assistant Professor, DTU) who has been my project mentor. She has continuously motivated and helped me in her best capacity at various stages in this project.

I would like to thank Mr. Manoj Kumar (Manager, Balkrishna Tyres) to help me reach out to people who were related to my field of study. It is for his hard work that I could conduct the study in the required time. I appreciate his involvement in the project and his regular advice that helped me refine the project to a great extent. His teachings made me learn a lot many new things that will be beneficial for me in the years to come.

Finally a note of thanks is due to all those, too many to single out by names, who have helped in no small measure by cooperating during the project.

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# EXECUTIVE SUMMARY

Intrinsic Value of a company is what most investors, researchers and stakeholders look out for dealing with the company in form of investment, mergers and acquisition, amalgamation or buyout. Value of a firm is dependent on a whole lot of factors which are categorized into qualitative and quantitative. Valuation of a firm can be both absolute and relative. Absolute valuation involves discounting future expected cash flows known as the widely used Discounted Cash Flow Method. The other methods are Dividend Discount Method. Relative Valuation compares similar companies on various multiples like Price to Earnings Ratio, EBITDA multiple, EBIT multiple, Cash Flows, EPS.

In this research our focus is on specific multiples like P/E, ROA, Net Profit Margin, EPS and Debt Equtiy Ratio. Major emphasis is paid on the capital structure of the company and how company manages or utilizes its assets. Prime consideration is analyzing the sources of funds and various applications of those funds to maximize shareholder's wealth. The operational performance is directly linked with valuation of the company.

For this study, comparable companies of the same sector are studied for validated comparison of the market value of the company. The sector for the reference is the Tyre sector. Tyre industry very well replicates the automotive industry and experiences same types of risks and opportunities. The recent BS-VI norms by Government have a huge impact on the industry increasing its technology investments. Tyre industry is highly dependent upon crude oil and carbon black, both of which are highly volatile in prices.
Their costs, profitability, capital structure and asset utilization are studied in depth.

A contrast of the company valuation and relative multiples and factors is drawn. The factors are regressed to infer a causal relationship between dependent and independent variables. The coefficients, standard error and p values are studied to conclude the thesis.

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# 1. INTRODUCTION

In financial markets, **stock valuation** is an important concept to make informed and prudent decisions on investments. It is the method of calculating theoretical values of companies and their stocks based on future fundamentals of the economy, industry and the company itself. It involves calculation of the underlined intrinsic value of the stock.

The stocks that are priced in the market above the intrinsic value are called overvalued stocks. Likewise, stocks priced below their intrinsic value are undervalued. Investors and tra ders prefer stocks that are undervalued. There is an e pectation that all the market forces would bring the price of the stock equal to its intrinsic value.

The concept of valuation is also used by businesses to assess the possibility and suitability of acquiring or merging with the company. Valuations are also to analyze long term contrac ts and dealings with the companies. Credit Rating Institutions and lenders of the company a re interested in the valuation of the company to assess their credit worthiness. Therefore, Va luation is an important concept and looked upon by every stakeholder of the company.

Stock valuation is usually divided into two groups:

- Absolute Valuation.
- Relative Valuation.

**Absolute valuation** intends to find the “intrinsic” value of the financial instrument. This method only focuses on the fundamental strengths of the company as the dividends, cash flow, and the growth rate for a single company. It takes into account company’s profitabil ity, growth factors, cost considerations and dividend policy.

**Relative Valuation:**

The Comparable method does not use any kind of parameters to find the market value. Ins tead, it compares the stock price multiples to a set benchmark value. The rationale for this method is that the similar financial instruments carry the same market value. It uses variou s multiples to compare value of companies with similar business model, scale of operations, variants in the same industry and are somewhat competitors to each other. At microeconomic level, performance is the direct result of managing various economic resources and of their efficient use within operational, investment and financing activities. To optimize economic results, a special attention should be given to the proper grounding of managerial decisions. These should be based on complex information regarding the evolution of all types of activities within the company. A synthetic picture of the company's financial position and its performance is found in the annual financial statements, which therefore become the main information sources that allow the qualitative analysis of how resources are used during the process of creating value.

In order one company to run on a long-term performance way, it is needed to develop, implementation and maintaining the strategies, measures and coherent policies from economic and financial point of view, resulted from a good knowing of internal and external specific conditions in which the firm acts. The qualities of managerial options depend by the ability of identifying those elements that productively used could lead to increasing of the results and performance.

The research objective of this paper is to investigate how economic performance is achieved by companies in the industry. To reach this goal, we believed that the most appropriate indicator that express the aspects related to economic development and performance growth of companies should be chosen among the relative profitability indicators.

The empirical study of the correlations between different impact factors and profitability has been conducted by using the information taken from the annual financial reports of a company in the Romanian chemical industry for the period 1999-2009 and by using appropriate statistical techniques.

Starting from the economic content of rate of return and the information provided by various financial indicators computed on the basis of financial statements, the regression analysis helped identify an econometric model of economic performance assessment expressed as Return on total assets. This reflects a combination of elements that explain and influence the evolution of companies' return, such as: the financial result, the advantageous use of the financing structure, the size of the technical and productive infrastructure, the efficiency of current assets, etc.

The statistical tests performed on variables and on the overall model validate its accuracy and the opportunity of using it in the analysis of microeconomic performance and in substantiating decision-making processes related to resources’ management.

## 1.1 Various Approaches To Valuation

With this basic data and the suppositions set up, the investigation goes to the determination of valuation approach(es). The salary, market and cost approaches are the three for the most part acknowledged valuation approaches. The determination of valuation approach(es) relies upon the actualities and conditions of the subject organization. A concise rundown of each methodology pursues.

**Income Approach:** The income approach changes over future money streams into a solitary present (limited) sum, while reflecting current assumptions regarding such future money streams.

The limited income ("DCF") is the most perceived strategy under the salary approach. In expansive terms, the DCF strategy catches the working estimation of a business in two essential parts: (1) the present estimation of anticipated money streams over the discrete projection time frame, and (2) the present estimation of the money streams past the discrete projection time frame, reflected in a remaining (terminal, or proceeding) esteem computation. A DCF might be connected to appraise venture an incentive through the present estimation of money streams accessible to all financial specialists (for example obligation free money streams), or to straightforwardly quantify the estimation of value by limiting value level money streams.

Some of extra issues become an integral factor while applying the DCF strategy, including understanding the basic idea of the income projections (for example a solitary doubtlessly case versus a weighted normal of different situations, or expected money streams); appraisal of the proceeding with an incentive past the discrete projection skyline; and choice of a markdown rate (cost of capital) steady with the nature and danger of the projections.

Notwithstanding the DCF strategy, there are different strategies or systems ordered as techniques under the salary approach, for example, Monte Carlo recreation, unforeseen cases investigation, limited financial benefit, and genuine alternatives examination, which are connected when suitable.

**Market Approach:** The market approach utilizes costs and other applicable data created by market exchanges including indistinguishable or equivalent (comparative) organizations or resources for benchmark the estimation of the subject business or business premium.

Two market approach techniques regularly used in a business valuation are the Guideline Company strategy and the Guideline Transaction technique, the two of which give signs of the estimation of a business by applying different proportions of significant worth (e.g., undertaking esteem, value esteem, cost per share) to budgetary measurements (for example income before premium cost, devaluation and amortization "EBITDA", after-charge profit, income) or nonfinancial parameters (for example number of endorsers) got from traded on an open market organizations or market exchanges.

Likeness between the subject organization and the rule organizations or exchanges is fundamental while applying the market approach, just like the determination of the fitting kind of multiple(s), the choice of the proper scope of watched products, and the way wherein they are connected to the subject organization. Moreover, a valuation would think about potential acclimations to the products, including changes for non-working resources, unfunded annuity liabilities, and working leases, just as development (for example value/profit development proportions, or PEG). Distinguishing rule organizations or exchanges, changing the budget reports of the friend gathering, and determining significant products requires a comprehension of the history and standpoint of both the rule organizations and the subject organization.

Also, examining earlier exchanges or offers for offers of the subject organization, assuming any, is another type of the utilization of the market approach.

**Cost Approach:** The cost methodology mirrors the sum that would be required right now to supplant the administration limit of a benefit.

Along these lines, many partner the cost methodology with the substitution cost strategy which is increasingly fitting to apply to an individual resource as opposed to a business. Nonetheless, a cost methodology might be useful for beginning time or new businesses where correlations with rule organizations are inconsistent, or projections are subjective to the point that they can't be dependably evaluated. Likewise, business visionaries frequently think about the estimation of their business as far as the speculation that would be required to supplant the advantages they have amassed.

The balanced net resources strategy (likewise known by different names) can likewise be connected to esteem a business in specific situations. This technique determines the estimation of the general business by assessing the estimation of the hidden resources and liabilities involving the business (unmistakable and impalpable resources, regardless of whether recorded on the accounting report or not), whereby every one of the part resources and liabilities would be esteemed under the cost, market or pay approach(es), as suitable.

In a valuation examination, the valuation approach(es) and method(s) most suitable in the conditions would be connected, thinking about the accessibility of important information.

## 1.2 Quantitative Factors

The **Return on Assets (ROA)** indicator expresses the company's ability to generate profit as a consequence of the productive use of resources and of the efficient management, and it's used as a dependent variable in the assessment of economic performance. It is computed as a ratio between Net Income and Total Assets.

In following it is presented the economic significance and the calculus way for the selected variables in order to study their impact on the industrial companies' performance.

**Fixed Assets Ratio (FAR)** expresses the share of the assets that the company disposes of permanently for its activities and indicates the level of capital investment in the technical and productive infrastructure. A high level of this indicator means an active investment policy, but its growth over a certain level (50%) may lead to an efficient use of the working capital and it limits the ability to expand current activities.

$$\text{Fixed Assets Ratio} = \frac{\text{Fixed Assets}}{\text{Total Assets}}$$

**Debt Ratio (DAR)** shows the extent to which the total assets of the company are funded by loans. A growth in dynamic ensures an increase in the amount of the business's financing sources, but also leads to less autonomy and financial solvency. For this reason, it's necessary to rationally and efficiently use this financing method.

$$\text{Debt Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

A good view of the modality of business financing is provided by the indicator **Financial Leverage Ratio (FLR).** It can be expressed as a ratio between debts and own capitals. Achieving a optimum rapport of financing structure can ensure company's investors by the perspective of a future development and implicitly, of the increasing of equities.

$$\text{Financial Leverage Ratio} = \frac{\text{Total Debt}}{\text{Total Shareholder's Equity}}$$

**Sales to Current Assets Ratio (SCAR)** is expressed as a ratio between Net sales and Total current assets and shows the incomings of the company from the management of current assets. A high level of this indicator signals the existence of a working capital deficit. In dynamic, usually a decrease of the ratio means a narrowing down of the company's activity, which slows its production, thus diminishing inventories and accounting receivables, which are related to the current activity.

$$\text{Sales to Current Assets Ratio} = \frac{\text{Net Sales}}{\text{Total Current Assets}}$$

**Sales to equity ratio (SER)** shows how well were used the own capitals for generating sales. In dynamic, an increasing of this indicator, generally suggests a positive aspect that reveals a better management of own capitals used in activity and a raise of their efficiency.

$$\textbf{Sales to equity ratio} = \frac{\text{Net Sales}}{\text{Total Shareholders' Equity}}$$

**Gross Margin Return on Inventory (GMROI)** indicates if the modality of inventory management generates profit. It is an important indicator for appreciating the inventory efficiency and the company's performance.

$$\textbf{Gross Margin Return on Inventory} = \frac{\text{Gross Margin}}{\text{Average Inventory}}$$

The indicator **Expenses Revenue Ratio (ERR)** connects expenses with revenue, and expresses the efficiency achieved by a company through minimize its costs. In dynamic, a decrease of this ratio indicates an improvement in resources management and economic performance increasing.

$$\text{Expenses Revenue Ratio} = \frac{\text{Operating Costs}}{\text{Operating Income}}$$

**Net Income (NI)** is an absolute expression of return, which synthesizes all financial flows related to the consumption of production factors and to achieve revenues. Through their significance, the selected indicators and the independent variables express various aspects of efficient management of resources and they were used in modelling the performance for the analyzed company.

**Operationalization of Variables** relates to the firm value as a proxy for the wealth of the company measured by natural log of its total assets. Companies with more fixed assets are likely to experience more financial risk with cost stuck up leading to bankruptcy.

$$\text{Risk} = \frac{\text{Standard deviation of EBIT}}{\text{Total Assets}}$$

## 1.3 Qualitative factors

While valuation seems, by all accounts, to be a quantitative science about fiscal reports, estimates, products, and rates of return, it is in reality increasingly subjective in nature. Valuation is a prediction of future desires for a business. To precisely mirror those desires, it is basically significant for an entrepreneur to distinguish and comprehend the esteem drivers, which are factors that expansion money streams and lessen hazard related with a business. There are several esteem drivers inferable from a business, some of which are industry-explicit. For quickness, we will talk about ten general elements we consider basic to expanding money streams and decreasing danger, accordingly improving in general organization esteem.

### 1. Capital Access.

The littler the organization, the more constrained its entrance to obligation and value capital. The organization should survey the sort of capital expected to accomplish its objectives. It considers the capital structure of the organization, wellsprings of capital, influence. How do bank agreement confinements sway the business and its feasible arrangements? Do investors need to give value or by and by assurance credits? Is getting an outside financial specialist and issuing favored stock a reasonable choice?

### 2. Client Base.

A strong and differentiated client base is fundamental for the progressing reasonability of a business. At the point when organizations develop and flourish by providing food just to their biggest clients, reliance may increment to the point where too extraordinary a level of incomes are concentrated with too couple of clients; organizations must deal with the allotment of client fixation to diminish the danger of losing an enormous wellspring of incomes.

What rate do the main five clients add to the organization's incomes? What measure of income is repeating? What is the financial helpful existence of its entyre client base, just as its biggest clients?

**3. Economies of Scale.**

As creation yield expands, organizations commonly accomplish lower costs per unit. Regardless of whether through amount limits or spreading limit costs over higher volumes, bigger organizations have unmistakable favorable circumstances in specific tasks and markets.

Is the organization viably misusing its inward economies of scale (i.e., cost investment funds that gather paying little heed to the monetary condition or industry in which it works)? What are the organization's development chances to understand extra or bigger economies of scale? Will the organization go into a consortium, joint endeavor, or re-appropriate to build purchasing power and lessen costs?

**4. Money related Performance.**

Money related investigation helps in estimating patterns, recognizing the benefits and liabilities of an organization, and contrasting the budgetary exhibition and state of the organization to other, also situated firms. Inside arranged and gathered budget summaries may hamper the board's evaluation of execution, making potential purchasers perhaps question the nature of this information.

How does the organization look at regarding liquidity, action, gainfulness, and dissolvability measures? Are money related controls set up? Are the financials evaluated or checked on by an outside CPA?

**5. Human Capital.**

An organization's representatives are the core of an association. Key esteem drivers incorporate the learning, aptitudes, experience, preparing, and inventive capacities representatives convey to a business and the strength of its organization culture.

What are the quality control systems? How viable are the creation/administration abilities? How is the organization overseen? What is the profundity and expansiveness of the board? Are there any key individual conditions as far as specialized learning, generation abilities, or client contacts? Is there an administration progression plan? What rights do singular investors have?

**6. Market Environment.**

Every business is affected by financial patterns and improvements in the business in which it works. The executives must see how the business is affected by financial factors and how the business is organized to limit the effect of full scale inclines on the business.

What is the organization's piece of the overall industry? Where is it situated in the market? Does the board have a comprehension of its specialty and exceptional advertising? Does it have various contributions that can adjust the effect of monetary swings?

**7. Advertising Strategy and Branding.**

Advertising is the connection between clients' needs and their reaction to an organization's items/administrations. Solid marking won't just improve organization deals by expanded market acknowledgment, it will likewise give an unmistakable bearing that will improve operational effectiveness when attached to the organization's main goal.

How does the organization showcase itself? What are its showcasing and deals abilities and weaknesses? How successful and known is its image? What is its online networking nearness? How viable is its site? Is the brand attached to the organization's statement of purpose and its vital bearing?

**8. Item/Service Offering.**

Forte organizations regularly get their quality from centering in specialty fields, yet focus may make dangers from absence of broadening and overdependence on constrained markets. Some claim to fame organizations may locate their biggest clients receive a strategy to manage providers who offer a wide scope of items, compelling them to either extend item contributions or offer out to a bigger organization. Expanding the expansion decreases chance, which improves esteem.

What is the organization's blend of contributions? Are any concentrated contributions subject to financial and industry swings? What items/administrations can be offered that vary from existing ones yet utilize comparable human capital, creation ability, client base, and so on to broaden? What openings exist for vertical or flat incorporation?

**9. Key Vision.**

Most organizations set up together a one-year spending plan, yet few endeavor to assemble a field-tested strategy or long haul conjecture. Valuation is about future desires and friends the executives needs a key vision to make esteem. The executives must investigate all the data they've assembled from checking on their organization to disclose a key vision that can be passed along to the future proprietor, giving extra help and confirmation of coherence, and even increment, of offers.

What is the board's long haul viewpoint? When did the organization last compose a formal marketable strategy? Is the organization's system tuned in to its clients' socioeconomics, residency, needs, and requests?

**10. Innovation.**

Organizations with less money related assets regularly need satisfactory innovative work assets, thinking that its hard to keep pace with mechanical changes in their business sectors. Such organizations frequently face an inevitable need to bring about a lot of capital consumptions sooner rather than later or allot assets to a predetermined number of item advancement ventures. This definitely results in item or administration outdated nature, unfavorable effect on future development, and loss of piece of the pie. Meanwhile, bigger organizations are in a superior position to exhibit innovative mastery by creating items that address developing client needs, driving clients to pick the best in class items, in spite of the possible accessibility of lower cost, lower execution innovation.

What number of assets does the organization assign to R&D? Is their utilization of innovation exceptional? Are there looming mechanical changes that could adversely affect the organization's item/administration advertising?

**11. Dividend Policy.**

This arrangement of the organization decides the measure of benefits the organization holds for reinvestment into business and what amount does it pay out to investors as profit.

Profits likewise rely on the age, extension plans and phase of development of the organization. This approach is determined with a fake variable with the accompanying arrangements:

DPR = 0 when organization does not issue any profit.
DPR = 1 when organization pays out profit as it should.

## 2. LITERATURE REVIEW

The valuation of regular stock/value share is substantially more contrasting than that of different securities like bonds, debentures and so forth. The changeability in its future stream of profits and the vulnerability about the future qualities/costs of stocks brought about by such varieties in returns makes the valuation of these securities become increasingly mind boggling. Consequently recognizing the powers that drive stock costs is a noteworthy worry for value financial specialists in securities exchanges. Essentially distinguishing proof of variables in clarifying the costs of stocks exchanged showcase is additionally significant for scholastics as well. This is on the grounds that by utilizing the substantive learning obtained by them from their examination, they can propose reasonable strategy structure to the administrative and improvement experts for their auspicious impact on the financial exchange of a nation for accomplishing its reasonable monetary development. Progressively over yield produced by their explore unquestionably encourages the financial specialists to devise dynamic venture techniques as per the venture destinations and asset imperatives.

While course books on valuation (e.g., Copeland, Koller, and Murrin [1994], Damodaran [1996], and Palepu, Healy, and Bernard [2000]) commit considerable space to talking about products, most distributed papers that review products look at a constrained arrangement of firm-years and consider just a subset of products, for example, profit and EBITDA. Likewise, correlations crosswise over various investigations are obstructed by methodological contrasts.

Among normally utilized esteem drivers, recorded profit and money streams have gotten the vast majority of the consideration. Boatsman and Baskin [1981] think about the valuation precision of P/E products dependent on two arrangements of equivalent firms from a similar industry. They find that valuation blunders are littler when tantamount firms are picked dependent on comparable verifiable profit development, in respect to when they are picked arbitrarily. Alford [1992] investigates the impacts of picking comparables dependent on industry, measure (hazard), and profit development on the exactness of valuation utilizing P/E products. He finds that valuing mistakes decay when the business definition used to select tantamount firms is limited from an expansive, single digit SIC code to arrangements dependent on two and three digits, yet there is no extra improvement when the four-digit order is considered. He likewise finds that

controlling for size and profit development, far beyond industry controls, does not decrease valuation mistakes.
Stock costs in a market might be dictated by a large group of components going from reasonable and principal elements to silly psychosomatic factors. So the conduct of stock costs is considered with the assistance of various Contents Part 7 268 Department of Applied Economics techniques or methodologies. These methodologies can be assembled in to two oppositely contradicted methodologies as Fundamental and Technical examination.

On looking over the current writing accessible on the value inquire about it is recognized that reviews checking the determinants of stock returns have as of now been made in Indian setting, however not broad. However, the uniqueness in discoveries of these investigations frequently confounds the a huge number of speculators in the nation – which approach they ought to pursue and what factors they need to consider as the base for the valuation of their stock ventures. Again the greater part of these examinations give push just to distinguish the unmistakable variables which decide the stock returns in India amid a specific period. Truth be told they have not made any endeavor to analyze the capacity of these components to figure the offer costs/returns in resulting periods; consequently neglected to give reasonable and solid answers for issues enduring in the valuation of stocks in the Indian capital market. Studies prompting the choice concerning how the presentation of a specific part or firms in the gathering explicitly influences the profits of that sectoral stock and the idea of connection between the variables deciding its presentation also, stock returns are uncommon among the examination works of this sort. The present investigation titled 'Principal way to deal with valuation of securities – A contemplate with reference to Information Technology (IT) division partakes in Indian Financial exchange" is relied upon to fill the current hole in the value inquire about base in India.

In this examination we inspect the vicinity to stock costs of valuations gener-ated by duplicating an esteem driver, (for example, income) by the relating different, where the various is acquired from the proportion of stock cost to that esteem driver for a gathering of tantamount firms. While products are utilized broadly by and by, there is minimal distributed research in the scholarly literature reporting the total and relative exhibition of various multiples.1 We look to explore the presentation of a far reaching rundown of products, and furthermore analyze an assortment of related issues, for example, the variety in execution crosswise over ventures and after some time and the performance improvement gotten by utilizing elective ways to deal with register products.

Despite the fact that the genuine valuation process utilized by market members is un-discernible, we expect that stock costs can be recreated by thorough valuations that convert all accessible data into point by point projections of future streams. Given this effective markets system for exchanged stocks, what job do products play? Indeed, even in circumstances where advertise valuations are missing, either in light of the fact that the value is secretly held or on the grounds that the proposed traded on an open market element has not yet been made (e.g., mergers and spinoffs), is there a job for products vis-a'- vis exhaustive valuations? While the numerous methodology sidesteps unequivocal projections and present esteem calculations, it depends on similar standards basic the more thorough methodology: esteem is an expanding capacity of future settlements and a diminishing capacity of hazard. Along these lines, products are utilized regularly as a substitute for comprehensive valuations, since they impart productively the quintessence of those valuations. Products are additionally used to supplement thorough valuations, regularly to align those valuations and to acquire terminal values.2 essentially, our investigation records the degree to which diverse esteem drivers fill in as an outline measurement for the flood of anticipated adjustments, and compa-rable firms take after the objective firm along significant esteem characteristics, for example, development and hazard. We initially assess esteem drivers utilizing the regular proportion portrayal (i.e., value pairs when the esteem driver copies). To recognize the significance of consolidating the normal impact of overlooked variables, we stretch out the proportion portrayal to take into consideration a block in the value/esteem driver connection. To examine the effect of choosing practically identical firms from a similar industry, we differentiate our outcomes acquired by utilizing in-dustry comparables (the center classification from the Sector/Industry/Group arrangement given by IBES) with results got when all organizations profit capable every year are utilized as comparables. As in earlier research, we assess execution by inspecting the conveyance of valuing mistakes (genuine cost less anticipated cost, scaled by genuine cost).

## 2.1 Indian Tyre Industry

Indian Tyre Industry gives the wheels to monetary development being a force for continue a 7% yearly augmentation in the GDP. It gives between 34% to 100% profit for open paid up capital. With colossal improvement and interest in the framework front, working of streets, roadways, Indian Tyre industry has huge potential for development and profit for capital.

The cost on framework, the streets and parkways, in 2017 monetary is ₹18.92 lakh crores (about 10.7% of GDP) and the cumulative investment in the past five years is 65.8 lakh crore.
The tyre business on an independent premise contributes 3% of the assembling GDP of India and 0.5% of the absolute GDP. In any case, its assessed yield multiplier impact is 2.47 because of linkages with different parts of the economy including elastic manors, oil, substance, capital

products and bundling materials, and so forth bringing about a complete financial commitment of 1.5% of the GDP when immediate, backhanded and actuated effects are considered.

The development of the tyre business, spoken to by turnover, has multiplied in five years from ₹25,000 crore in 2009-10 to ₹53,000 crore in 2015-16, which is quicker (9.3%) than the development of the mother business, for example the vehicle business (5.3%), in a similar period.

The tyre business sends out around 9-10% of its all out creation to more than 100 nations and contributes about 0.53% of the nation's all out fares with normal yearly net outside profit of about $1 billion throughout the previous five years.

Capital venture has developed by over 25% to ₹36,000 crore in 2015-16 from ₹12,000 crore in 2010-11, making it a standout amongst the most put enterprises by private business in India. By 2018-19, the industry is relied upon to finish ventures worth ₹7,000 crore, contributing an extra 12 million units in limit.

Such interests in limit make better economies of scale, business what's more, esteem expansion for the economy.

The Government of India and Indian Automotive Industry's vision plan alluded to as "Car Mission Plan 2016-26 – AMP 2026" features that the car business with a development at CAGR of 13% (base case) and 15% (hopeful case) will have a yield of ₹16,160 billion and ₹18,895 billion of every 2026. The tyre business being an essential piece of the car business is probably going to pursue a similar development direction and expected to achieve dimensions of ₹2,074-2,423 billion in the following 10 years.

Coming up next are the fragments on which India can center for expanding its fare share: Presently, India's commitment to the worldwide tyre exchange is $1.5 billion (1.72%) out of the $80 billion market. There is a gigantic headroom for development of fares from India, where it can build its offer to 4-5%, especially in vehicle/transport/truck and mechanical tyres, which establish 90% of the business sectors where the nation's offer is as of now just 1.2%. This can be accomplished through Government and private organization through exchange and financial boost.

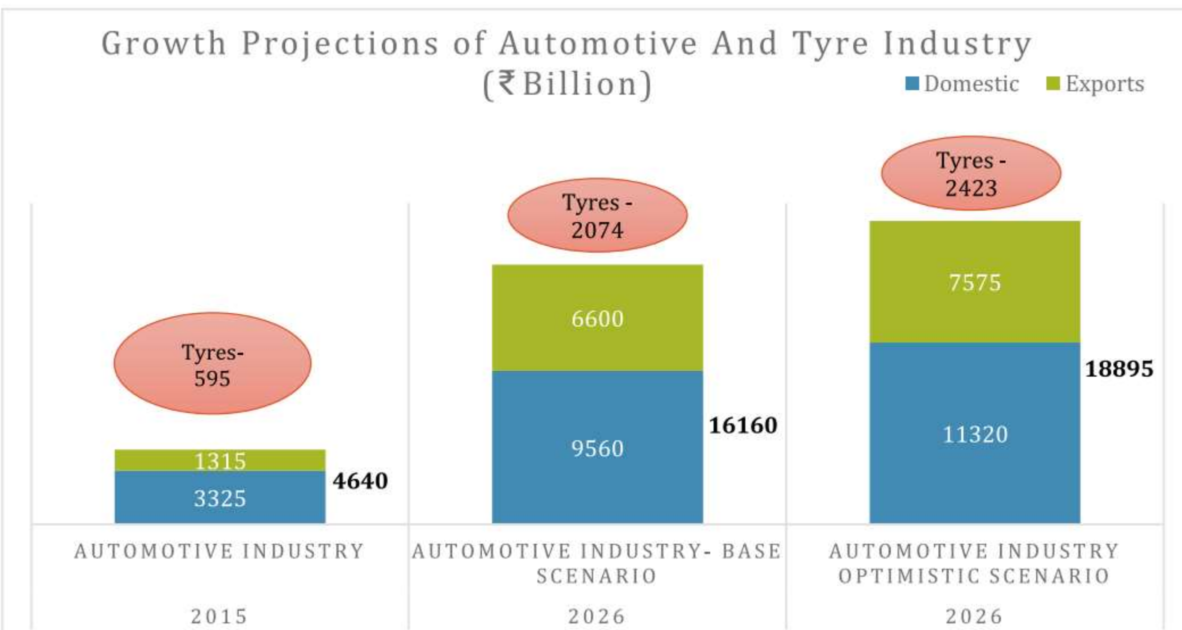



**Fig. Growth Projections of Tyre Industry**

The tire business straightforwardly utilizes contributions from the elastic estate industry/oil segment and has linkages with auxiliary ventures, for example, concoction, capital products and bundling materials, and so forth. It likewise has different linkages with exchange and administrations of tire items everywhere throughout the nation. Thus, when the interest for items from the tire business rises, the interest for the results of these subordinate and different enterprises will go up, bringing about a circuitous effect on the economy.

With expanded interest, business and pay additionally rise which prompts ascend in spending power and consequently utilization, finishing in the interest for other related portions, state shopper merchandise. Furthermore, the tire business prompts profitability increases using cars which thus expands singular efficiency. Then again, tires, through their utilization in farming, mining, avionics, modern and development generate monetary profitability and productivity. This is known as instigated impact.

Key Highlights

- Turnover has multiplied in 6ive years from ₹25,000 Cr in 2009-10 to ₹53,000 Cr in 2015-16
- Tyres are 3% of the assembling GDP of India and 0.5% of the entyre GDP of the country.
- The absolute monetary commitment of the tire business is evaluated to be ₹15,710 crore which is about 1.5% of the GDP when its immediate, aberrant and instigated impacts are considered.
- The tire industry is one of the exceedingly gainful ventures after pharmaceuticals with a normal MVA of 21.5%, which is well over the middle MVA of 14% for the assembling business.
- The all out immediate and backhanded work produced by the tire business depends on the evaluated multiplier impact, which is about 2.8 million.
- The tire industry is innovation driven with its TFP development being more than the business middle.
- Tax multiplier of elastic items (tires) is 2.77 occasions, which is one of the most astounding among all assembling divisions.
- Tyres have 0.53% offer of the nation's all out fares and contribute all things considered net remote profit of $1.0 billion.

Tire creation in India has developed altogether and it has dramatically increased over the most recent 10 years. It has expanded from 73.5 million tires in 2006-07 to 152 million tires in 2015-16.Almost all categories of tyres are produced by the industry with two and threewheeler tyre categories dominating the industry's volume over a period of time. Tyres in India are produced by 41 medium and large tyre companies in 62 plants around the country. The top 10 tyre manufacturing companies produce 90% of the tyres in India. The top three companies: MRF, Apollo Tyres and JK Tyres have 60% of the market share of the Indian tyre industry and 6igure among the top 25 global companies in terms of revenue.

The industry can be segmented into seven broad categories based on the tyres produced for various types of vehicles. In terms of volume, two/three-wheeler tyres account for more than half the production but contribute only 13% of the industry revenues. The high share of two/three wheelers in the tyre market corresponds to the high production of two/three wheelers in the automobile industry. The truck and bus tyre segment contributes approximately 13% to the total tyre production. However, as far as revenue is concerned, it has the highest revenue share of the industry at 54%.

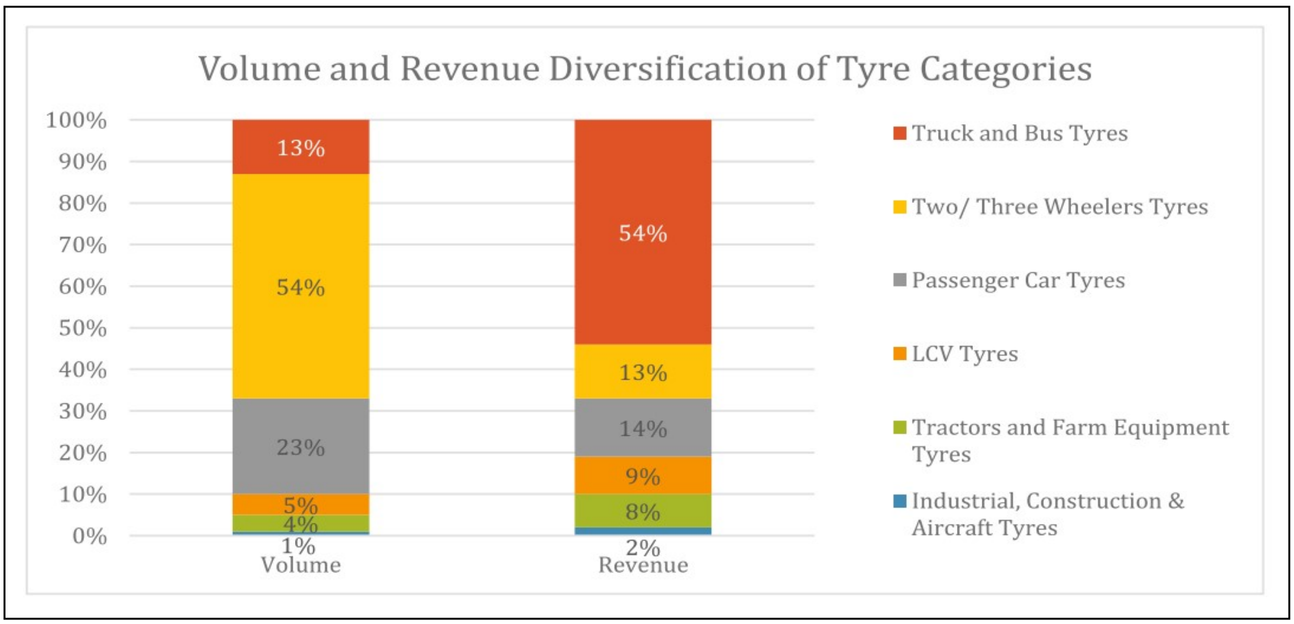



**Fig Volume and Revenue Diversification of Tyres**

The business works presently at 60-70% of use, which is relied upon to fall as extra offices are included 2016-17, subsequently the catalyst for interest is basic for supporting the business. The business, because of such noteworthy capex in the greenfield ventures, has a total obligation to dimensions of ₹8,030 crore in 2015-16. The ASI information additionally demonstrates that the pay/obligation proportion and intrigue/salary proportion of the business is descending, connoting critical capital mixture made by private players amid this period. A mind-boggling expense of capital with difficulties to use limit viably will put industry edges under extreme weight.

The tire business is a crude material serious industry. Crude material records for 65-70% of the complete expense. Proficiency in use of crude material to a limited degree influences the variable cost effectiveness and intensity of the local tire industry.

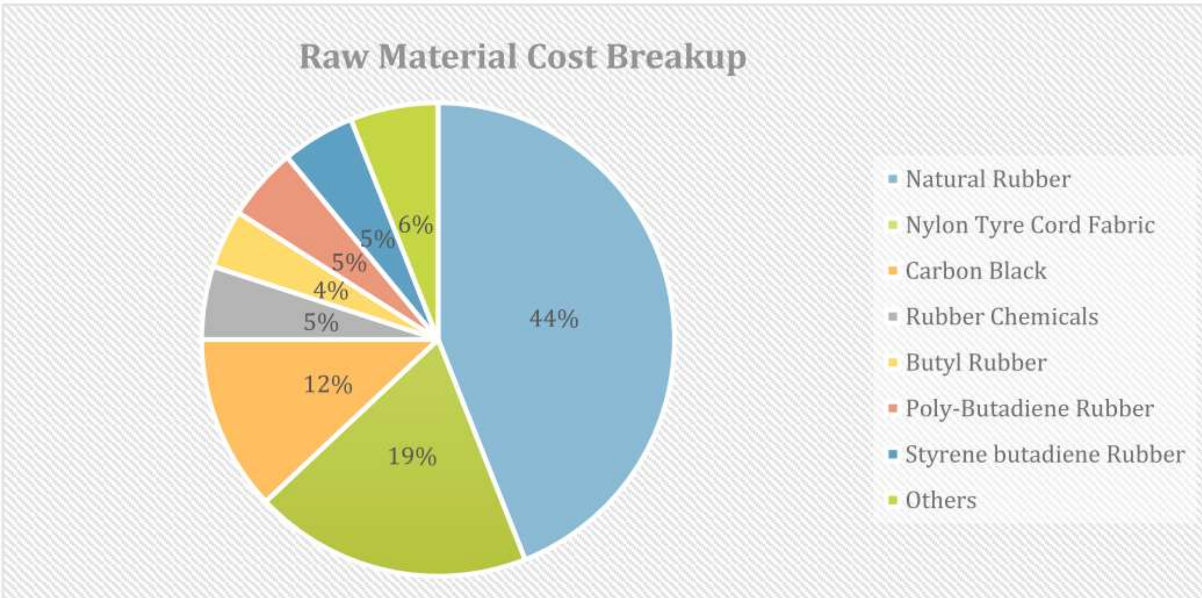



**Fig Raw Material Cost Break up**

Openings And Challenges For The Indian Tire Industry

India holds certain favorable position s and openings which are pivotal for the development of the tire business. In any case, there are various detours to its development which should be survived, as the business hopes to add to the Government's "Make in India" program. This segment centers around these chances, and the difficulties are talked about here in detail.

- **Rising Income Levels**
- **Penetration Levels of Passenger Cars**
- **Increasing Urbanization**
- **Faster Economic Growth**
- **Growing Radialisation of Tires**

**Risks For Tyre Manufacturing In India**

The tire business in India, as talked about above, has a few chances to develop; in any case, regardless it has far to go so as to contend in the worldwide commercial center. This area investigations key difficulties looked by the Indian tire industry that influence development and intensity in the worldwide commercial center.

- **Inverted Duty Structure**
- **Negative Impact of Trade Agreements**
- **High Tariff Rates on Indian Exported Tires**
- **Greater Import Dependence on Raw Materials**
- **Price Arbitrage of the Natural Rubber**
- **Tyre Imports from China**

## 2.2 Company Analysis

| Name | Last Price | Market Cap. (Rs. cr.) | Sales Turnover | Net Profit | Total Assets |
|---|---|---|---|---|---|
| MRF | 57,009.30 | 24,178.46 | 15,837.00 | 1,096.87 | 12,116.89 |
| Balkrishna Ind | 798.20 | 15,430.58 | 5,244.50 | 782.00 | 5,508.04 |
| Apollo Tyres | 194.60 | 11,132.09 | 12,353.77 | 592.11 | 10,377.53 |
| **Ceat** | **1,040.10** | **4,207.21** | **6,831.30** | **288.91** | **3,968.07** |
| JK Tyre & Ind | 80.90 | 1,992.01 | 7,613.35 | 204.40 | 5,005.19 |
| TVS Srichakra | 2,067.75 | 1,583.29 | 2,381.76 | 103.17 | 1,152.72 |
| PTL Enterprises | 40.75 | 269.72 | 63.22 | 39.85 | 487.90 |
| Elgi Rubber | 22.55 | 112.86 | 202.88 | 0.46 | 374.89 |

As we can see from the summary table above, MRF has a more consolidated profits and turnover than other peers of the industry.

**Ceat Tyres Ltd.**

Mumbai headquartered CEAT, the lead organization of the Rs 22,000-crore RPG Enterprises, was set up in 1958. Today, CEAT is one of India's driving tire makers and has solid nearness in worldwide markets. CEAT delivers more than 15 million tires every year and offers the most extensive scope of tires to all sections and fabricates world-class radials for: rock solid trucks and transports, light business vehicles, earthmovers, forklifts, tractors, trailers, autos, bikes and bikes just as auto-rickshaws.

The Company sticks to severe standards of enthusiasm, qualities, dynamism and strength and is intending to helping billions of individuals have a sheltered adventure. Today, CEAT creates more than 26 million tires a year promising safe travel to every one of its clients. CEAT consolidates both in house fabricating and redistributing with plants at Halol, Nashik, Mumbai, Nagpur, Ambernath and Hyderabad. Halol plant has a best in class Research and Development Center which satisfies the optimistic and dynamic needs of the clients.

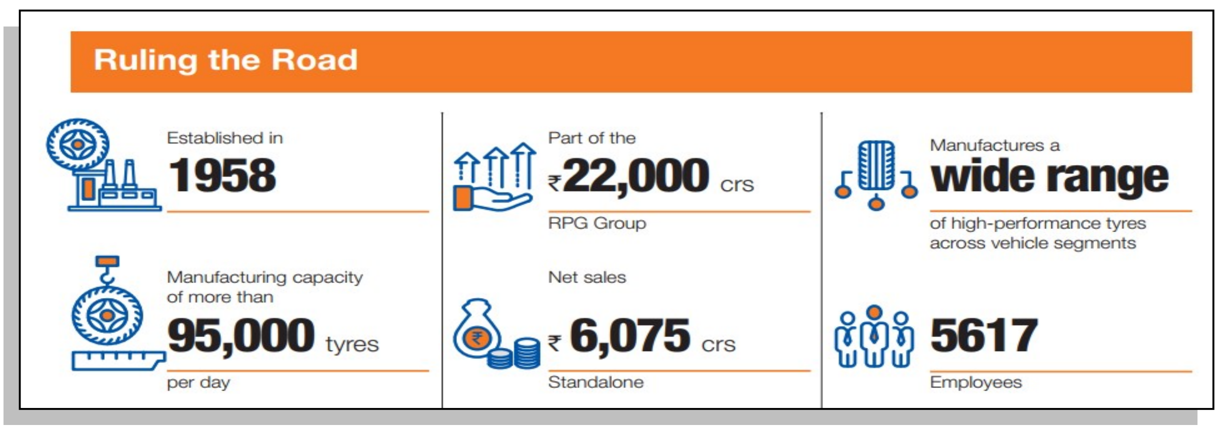



**Fig. 1.1 CEAT at a Glance**

Worldwide Presence

CEAT gets a main position as an exporter among Indian tire organizations. They have set out emphatically over every single significant landmass, which are clubbed into 7 groups. Fares are significantly fixated on truck and transport tires, off-expressway tires and tires for Light Commercial Vehicles. Notwithstanding the 7 groups, CEAT likewise has nearness in Sri Lanka having a Leadership position with around half piece of the overall industry. In the wake of propelling vehicle spiral tires, CEAT has figured out how to reaffirm its situation in European market starting with Italy.

Italy

CEAT entered the pined for European market in 2016 through its selective scope of traveler vehicle tires. Italy – the origination of CEAT – turned into the normal decision for its reentry. CEAT plans to be the brand of decision through centered marking and advertising endeavors in the nation.

Spain

In Spain, CEAT has cleared its approach to end up a standout amongst the most looked for after quality brands inside one and a half years. Persistent spotlight on marking is building up CEAT in the nation.

Poland

After Italy and Spain, Poland has been the following huge wagered for CEAT. In spite of the fact that another contestant, CEAT has had the option to build up itself in Poland with its consistently expanding impression over the most recent one year.

CEAT Specialty Tires Limited (CSTL), completely possessed backup of CEAT presented another scope of astounding Agriculture outspread tires, made at its new best in class plant at Ambarnath, in the US and Europe markets. A 360-degree advertising effort was propelled to drive mindfulness about the brand. CSTL propelled print media battles in driving industry productions in the US and Europe (the UK, France and Germany) with a target to acquaint the brandas well likewise with drive its key differentiator for example the intensity of CTR (low Compaction, high Traction and high Roadability) CSTL had a significant nearness at Agritechnica – the world's driving exchange reasonable for agrarian innovation appear in Europe. CSTL's Agriculture spiral tires, 85 arrangement, were tried against rivalry by VTT, an outsider testing organization, based out of Finland.

**Madras Rubber Factory (MRF)**

Headquatered in Chennai, MRF is the largest producer of tyres in our country and ranks around 14th in the world. It is not only catered to Tyres but includes a portfolio of products ranging from toys, paints, treads, tubes and conveyor belts.

Amid the monetary year finished 31st March, 2017, your Company's all out income was Rs.15,078 crore as against Rs.22,483 crore in the past year and a half period finished 31st March, 2016. The net benefit for the money related year was Rs.1,451 crore as against Rs.2,474 crore in the past period. In all cases there was a general increment in all sections signifying a 10% expansion in complete tyre creation. The Company's expenses remained at Rs.1,316 crore for the monetary year finished 31st March, 2017 as against Rs.1,856 crore for the year and a half period finished 31st March, 2016.

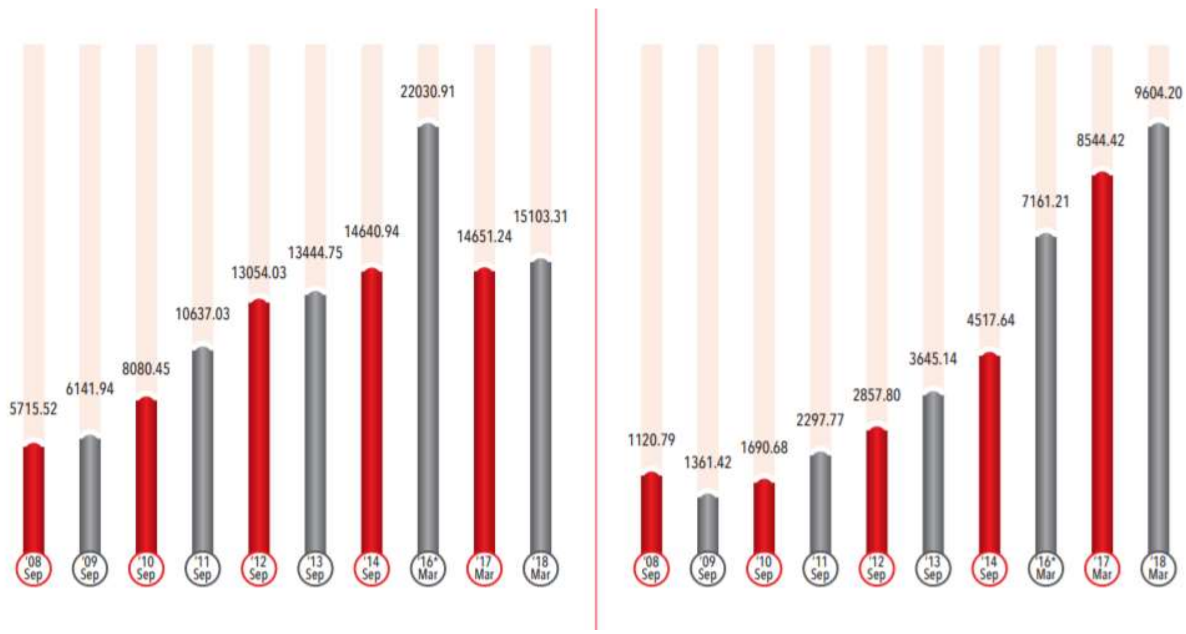



**Fig. Growth in Revenue and COGS**

The Company has created and executed a hazard the board arrangement for the Company including the Board and the Audit Committee intermittently embrace a survey of the major dangers influencing the Company's matter of fact and furthermore the strategies/measures advanced to moderate these dangers. The Company has sufficient inward money related control strategies comparable with its size and nature of business. These controls incorporate very much archived methodology, covering budgetary and operational capacities.

The interior monetary controls of the Company are satisfactory to guarantee the exactness and culmination of bookkeeping records, opportune arrangement of dependable budgetary data, avoidance and discovery of fakes what's more, blunders and shield against any misfortunes or unapproved use or transfer of advantages. These controls are evaluated all the time by Internal Audit.

There was a general increment in all fragments signifying a 8% expansion in complete tyre creation. In the Heavy Business Vehicle section, the expansion was 5% over the past year while Light Commercial Vehicle tyres expanded by around 4%. The Light Commercial Vehicle tyres developed by a negligible 2% in the 4-wheeled section, while it ascended by 3% in the 3-wheeled fragment, over the past year. Traveler and SUV demonstrated a 7% development. The Farm section developed at 4%. The Motorcycle and Scooter sections ascended by 10% and 13% individually. The OTR portion developed at 2%.

**Apollo Tyres**

Apollo Tyres Ltd is the world's eleventh greatest tyre maker, with yearly united incomes of ₹146.74 billion (US$2.28 billion) in March 2018. It was joined in 1972. Its first plant was authorized in Perambra, Thrissur, Kerala, India. The organization presently has four assembling units in India, 1 in Netherlands and 1 in Hungary. It has a system of almost 5,000 vendors in India, of which more than 2,500 are restrictive outlets. It gets 69% of its incomes from India, 26% from Europe and 5% from other geographies.

Apollo reported its entrance into the bike tyre fragment with contract producing in March 2016. In November 2016, the organization marked a MoU with the Government of Andhra Pradesh to set up another processing plant in Andhra Pradesh to fabricate tyres for bikes and get trucks.

With the bullishness in the Indian economy and the Indian vehicle industry, the tyre business additionally was on a northward walk. Inward gauges demonstrate that the development has been driven by the OE deals more than deals in the substitution showcase. A 19% development in the business vehicle fragment saw the tyre business following a comparative development chart and keeps on representing the most astounding an incentive inside the business. Great rainstorm saw a solid interest for all tractor tyres (front, back and trailer) which posted great development numbers.

Europe saw a steady execution of the tyre business except for the horticultural tyre deals, which performed severely for the fourth year straight. The OE part of the traveler vehicle section developed imperceptibly by 1% to close the year with 86.7 million units.

On an independent premise, Company accomplished a net turnover of Rs.101,332 million as against Rs.88,167 million amid the past budgetary year. EBIDTA was at Rs.13,692 million when contrasted with Rs.14,626 million amid the past budgetary year. The Net Profit for the year under audit was Rs.6,224 million, as against

Rs.8,027 million in the past monetary. The united net turnover of your Company was Rs.146,741 million amid FY2018, when contrasted with Rs.130,630 million in FY2017. The united EBIDTA was Rs.17,678 million for FY2018 when contrasted with Rs.20,005 million for the past money related year. On merged premise, Apollo Tyres earned a Net Profit of Rs.7,239 million for FY2018 as against Rs.10,990 million for the past money related year.

The year under survey saw the crude material cost increment by ~ 10% in the course of the last monetary. The major commitment in this cost push was from Carbon Black, Synthetic Rubber, Nylon Fabric, Chemicals and Natural Elastic.

The recuperation in the car business and the resultant solid OE request post GST put a ton of weight on the crude material store network in the second 50% of the year with snugness saw in Carbon Black, Synthetics and Beadwire. The interest supply hole in Natural Rubber kept over the span of the year.

Oil costs amid the year kept on climbing upwards. The brent oil costs crossed the mental characteristic of USD 70 for each barrel in the period of January 2018. Expanded consistence by OPEC individuals to concurred creation cuts upheld by other huge oil exporters has kept the oil costs high amid the monetary year. The present OPEC creation slices are probably going to stretch out till the finish of 2018. The oil costs have now discovered another typical in the band of USD 60 - 65/bbl as against USD 50 - 55/bbl in the most recent year.

The three noteworthy Natural Rubber (NR) delivering nations of Thailand, Indonesia and Malaysia have been directing fares of NR under the Agreed Export Tonnage Scheme (AETS) to shore up costs. Amid the year, AETS 4 and AETS 5 were acquainted with reduce sends out by 615,000 MT and 350,000 MT separately.

Common Rubber in India kept on pulling in 25% Customs Duty. The port confinements on NR and furthermore the pre import condition on NR imports under development licenses kept amid the year. India's necessity of NR for spiral application keeps on developing quickly with the expansion in the generation of truck and transport spiral tyres. This expanded necessity for outspread application must be met through imports. The obligation on import of Nylon Fabric was raised from 10% to 20% in the period of October 2017.

There was serious snugness in the accessibility of Carbon Black in India. The limit creation in the Carbon Black industry has lingered behind the speculations made in the Tyre Industry prompting genuine supply limitations. The circumstance wound up intense in Q4 with the conclusion of a Carbon Black unit in North India attributable to ecological reasons. The Company needed to import Carbon Black to proceed with its assembling tasks inspite of antidumping obligation on import of Carbon Black from China which is the biggest maker of Carbon Black in the world.

The customary evaluations of Synthetic Rubber - Styrene Butadiene Rubber (SBR) are presently delivered in India prompting import substitution. In any case, antidumping obligation has been forced on imports of SBR from Korea, Thailand and Europe in August 2017. The Solution SBRs utilized in the production of tyres with low rolling obstruction are not delivered in India and must be imported from Europe and South East Asia.

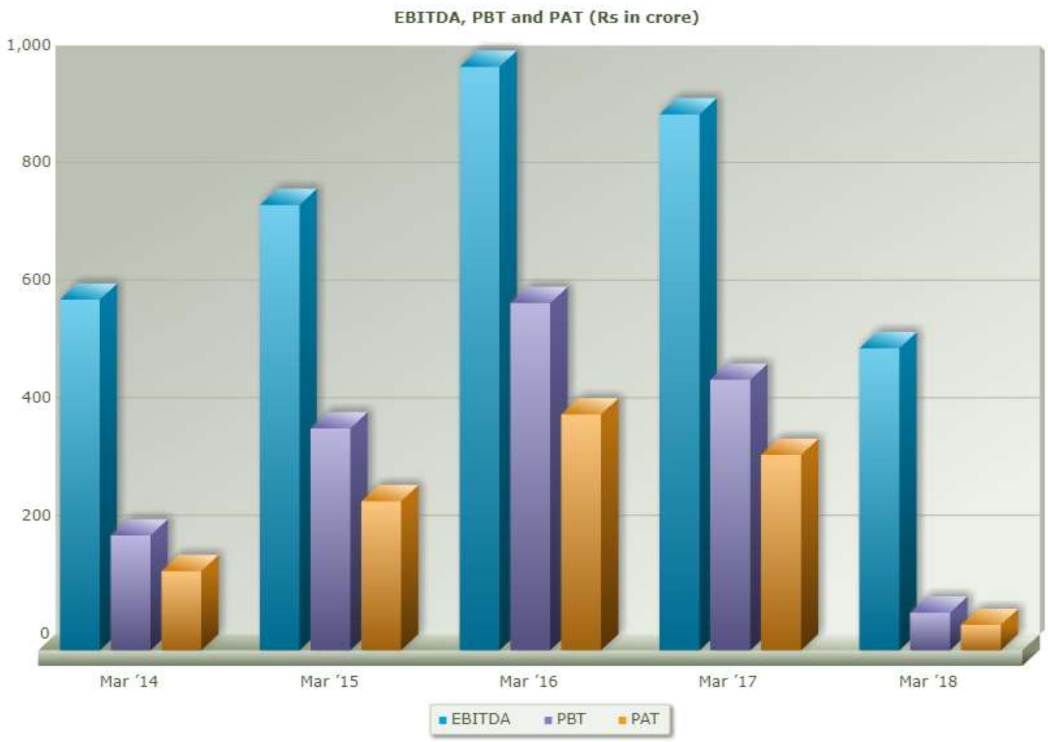
Elastic synthetic concoctions accessibility has been affected because of shutdown of substance enterprises in China which has the biggest synthetic impression all inclusive. The antidumping obligation proceeds on imports of real Raw Materials - Carbon Black from China and Russia, Nylon Fabric from China, Rubber Chemicals from China, EU and Korea.

Apollo Tyres has a predictable reputation of profit installment. The Directors are satisfied to suggest a profit of '3/ - (300%) per offer of Rs.1/ - each on Equity Share Capital of the Company for FY2018 for your endorsement. There will be no assessment derivation at source on profit installments, yet certain predefined investors (inhabitant in India) accepting a profit salary surpassing Rs.1 million, would end up at risk to make good on extra government obligation @ 10% (in addition to appropriate extra charge and cess). Your Company would keep on bearing duty on profit @ 20.56 %, comprehensive of additional charge and cess.

**JK Tyres**

JK Tyre and Industries Ltd is a car tyre, cylinders and folds fabricating organization situated in Delhi, India. The name JK is gotten from the initials of Kamlapatji (1884– 1937) and his dad Seth Juggilal (1857– 1922). JK Tyre is situated in more than 80 nations over every one of the 6 landmasses. It is a piece of J. K. Association gathering of Companies. JK Tyre procured Mexican tyre major – Tornel in 2008. With creation offices in each of the 9 plants, all out generation limit is right around 20 million tyres p.a.

The year saw wonderful arrangement and basic changes. The execution of Goods and Services Tax (GST), recapitalization of Public Sector Banks and other monetary activities will reinforce the Indian economy. In the setting of different changes and advancements, the universal FICO assessment office, Moody's, updated India's' evaluating after a hole of around 13 years. Amid this monetary, the Indian economy has developed by 6.75%. With the proceeded with spotlight on country economy, human services, instruction, foundation and digitalization, the GDP is relied upon to flood ahead in the scope of 7 - 7.5% in FY19 prompting an advanced, solid and sure India.




The Tyre Industry developed by 7% in volume. JK Tyre exceeded the Industry finishing the year with a development of 11%, and expanded its market nearness crosswise over classes particularly in Truck, PCR, Light Truck, Small Business Vehicles, Farm and OTR tyres. Truck radicalization further quickened to 47% amid the year and is required to cross half in the year ahead.

The year 2017-18 saw an exceptional increment in the oil costs which together with pre and short lived GST usage impact majorly affected generation expenses and edges of the Tyre Industry in general. JK Tyre was no exemption. The Company alongside its backups, on a solidified premise, recorded a Turnover of Rs, 8,543.41 Crores with Profit Before Tax (PBT) at Rs, 106.81 Crores.

On an independent premise, the Company accomplished a turnover of Rs, 6,610.95 Crores with PBT of Rs, 63.85 Crores. The year under survey saw generally crude material cost increment by 13%, while tyre costs expanded possibly. The principal half of the year saw crude materials costs spiraling by as much as 23% over the comparing enough said. Oil costs did not lessen and flooded to a high of US$ 75/barrel. This affected all the petro based crude materials, especially carbon dark where costs expanded by as much as 35%. Regular Rubber costs as well stayed high during the time other than compelled accessibility.

Innovation and development assume critical job in execution and development of any association. To develop, your association depends on R&D and innovation groups, who enthusiastically take a shot at reliably improving procedure furthermore, items through their insight and aptitude. They make creative items by getting application needs and qualities required, through fundamental and connected research in lab and in assembling.

Advancement and inventiveness are main impetuses behind the R&D and Technology endeavors of your association. JK Tyre in relationship with Hari Shankar Singhania Elastomer and Tyre Research Institute (HASETRI) and RPS Center of Excellence for Tyre and Vehicle Mechanics situated at IIT Madras is persistently dealing with propelled material, interchange material, nano innovation, procedure and item reproduction, prescient innovation, propelled tyre mechanics, tyre portrayal including moving in the direction of decrease of crude material utilization. For decrease of ozone harming substance discharges (carbon dioxide), HASETRI in relationship with

JK Tyre's' item advancement bunch is creating tyres with decreased moving opposition and footing (wet and dry) without influencing mileage. These endeavors helped your Company offer different elite tyres for new age vehicles, which were effectively popularized crosswise over classes.

# 3. RESEARCH METHODOLOGY

For Research Objective in determination of Valuation deliverables, I have contrasted four top companies of the tyre sector namely Ceat, MRF, Apollo and Jk Tyres. Choosing the same industry for all the companies will bring out significant contrast between valuations of the companies. It will do away with all the sector biasness and relative factors affecting a particular industry. I have studied the various ratios of the companies including profitability, liquidity, solvency and coverage ratios. These ratios reflect the relative performance of all the taken companies. I have contrasted the financial statements of all the companies and analyzed company’s well being from a financial standpoint.

Utilizing enormous informational collections could reduce the presentation of products, since the specialist chooses equivalent firms in a mechanical manner. In contrast, advertise members may choose similar firms all the more cautiously and consider circumstance explicit variables not considered by analysts. Tasker [1998] looks at over industry designs in the choice of com-story firms by speculation brokers and examiners in procurement transactions. She finds the methodical utilization of industry-explicit products, which is steady with various products being progressively fitting in various industries.

Major emphasis is paid on the capital structure of the companies and a contrasted in asset utilization for maximization of profits. These would relate to the financial risk of the company and fulfillment of its fixed obligations. Dividend payment is also contrasted as it determines the company’s expansion and growth plans.

The data taken for the study is from the latest 10 K Annual Reports of the companies. Management discussion section is analyzed to interpret company’s market share, further growth plans, risks and opportunities. At the end, A multiple regression test is run to study the causality of the relationship between various ratio multiples like EPS, ROA, Debt Equity and P/E ratios. The regression test incorporates the ratios as independent variables and stock value as the dependent variable.

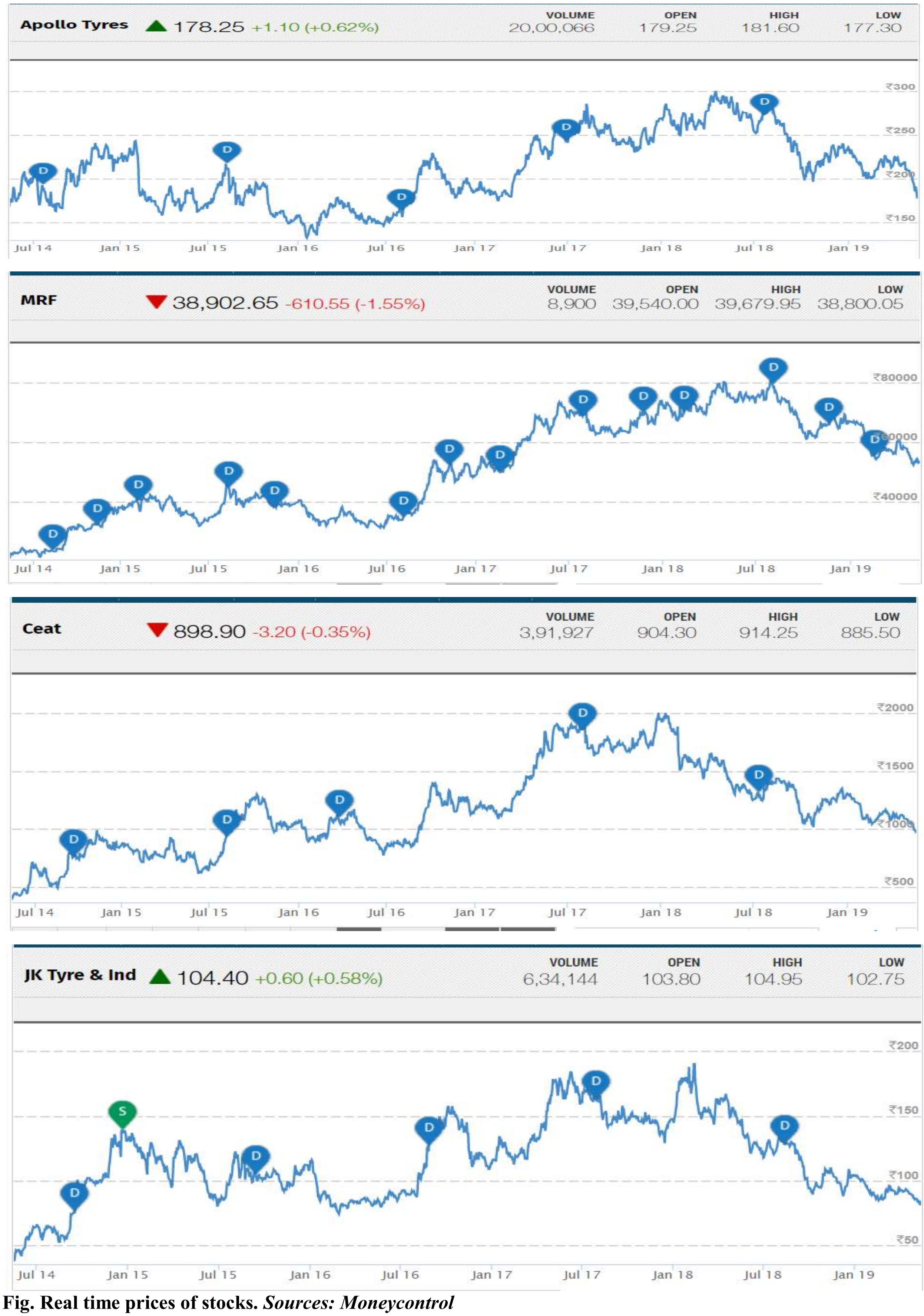



**Fig. Real time prices of stocks.** ***Sources: Moneycontrol***

The above represent real time prices of stocks of CEAT, Apollo, JK Tyres and MRF. As we can see from the images, demand for MRF stocks is higher which are depicted in the rising prices of the stock when compared to JK and Apollo. Since July'18, all the major stocks of tyre industry have fallen which is due to the recent BS –VI emission norms. The large variations in prices of MRF are due to large movements in the volumes of its shares.

The hypothesis question here is: *"Valuation of a company is dependent on multiples of P/E, EPS, ROA, and Debt Equity."*

The mean and median of the multiples is chosen to provide a broad picture of the industry as a whole. R square, Adjusted R square, T and F value is studied to validate the study. Other factors and disturbances are assumed to be constant to build the robust regression model. The variances explained by the model are studied to test goodness of fit of the model into the data.

## 3.1 Valuation Analysis

BALANCE SHEET ------------------- in Rs. Cr. -------------------

| | CEAT | MRF | JK TYRES | APOLLO TYRES |
|---|---|---|---|---|
| | Mar'18 | Mar'18 | Mar'18 | Mar'18 |
| **Sources Of Funds** | | | | |
| Total Share Capital | 40.45 | 4.24 | 38.66 | 57.21 |
| Equity Share Capital | 40.45 | 4.24 | 38.66 | 57.21 |
| Reserves | 2,506.37 | 9,599.96 | 4,056.57 | 7,203.41 |
| Revaluation Reserves | 0.00 | 0.00 | 0.00 | 0.00 |
| **Net Worth** | **2,546.82** | **9,604.20** | **4,095.23** | **7,260.62** |
| Secured Loans | 415.94 | 728.37 | 250.91 | 1,978.73 |
| Unsecured Loans | 0.00 | 819.33 | 367.66 | 533.09 |
| **Total Debt** | **415.94** | **1,547.70** | **618.57** | **2,511.82** |
| **Total Liabilities** | **2,962.76** | **11,151.90** | **4,713.80** | **9,772.44** |

The above table brings out the contrast in the balance sheet items of the five comparable companies from the tyre industry. All the major line items of balance sheet have been included here. The above comparison drawn may reflect the earnings and valuation thus arrived for the company.

It can be inferred from the above table that Equity Share Capital of Apollo Tyres is maximum at Rs. 57.21 crores followed by CEAT at Rs.40.45 crores and Balkrishna Ind at Rs. 38.66 crores. In the form of capital structure, Apollo Tyres has maximum debt of Rs. 2511.62 crores which is seconded by MRF at Rs. 1,547.70 crores and Balkrishna at Rs 618 crores. CEAT has a reduced debt of Rs 416 Crores.

Here, JK Tyres has no debt which provides it with advantage of no fixed obligation in the form of interest charges. This reduces the risk factor involved with borrowed capital which in term improves the credibility of the company. If we look at Debt Equity Ratio of the four companies

Apollo Tyres has the highest Debt Equity Ratio which increases its leverage and fixed payment obligations.

| | Apollo | MRF | JK | CEAT |
|---|---|---|---|---|
| **Debt Equity Ratio** | **1.45** | **1.81** | **0.14** | **0.44** |

Firm's value has a key determinant which is capital structure of the firm. A firm can arrange for capital firms from two sources, one of which is raising Share Equity capital through IPOs which include taking money from the general public known as investors. Investors receive dividend on their investments and capital appreciation of the stock prices over a long period of time. Dividends are paid after taxes are met. This means that dividends are not tax deductible. But apart from that dividends do not have compulsory payment in terms that they pay dividend only when it is accruing profits and has no current expansion of capital expenditures.

One the other hand, other source of capital is through raising long term debt from different sources like Commercial banks, financial institutions, NBFCs, etc. Lenders are obliged to receive compulsory annual interest payments which are a percentage of debt taken depending upon the credit rating of the company. Principal redemption of debt is compulsory as and when the moratorium period ends. Interest payments are tax deductible when compare with dividends in

terms of equity capital. Tax obligation of the company is reduced. Though, the decision of choice of capital structure is dependent on various factors like stage of growth of company, capital requirement, profitability, reserves, nature of industry, gestation period, etc.
The cost of acquiring debt is cheaper than acquiring equity. Financial fund managers play an important role in deciding the optimal capital structure, one which provides maximum value to the firm and minimizes cost of capital.

Choosing more debt creates economic distortions in respect of high risk of bankruptcy, debt bias and a great threat to public revenues. We have seen many recent case of bankruptcy with various public sector banks like PNB scam of Nirav Modi, Vijay Mallya, a fugitive is still on the run.
This risk posed with debt has an adverse impact on the credit rating of the company which in turn again increases its debt. Nowadays, recent trend is seen as rolling over of debt or revolving debt which means taking other short term loans to repay other long terms loans. Due diligence is required to study the sources and applications of funds. /it is an alarming call if debt is taken to repay debt. This will tie the companies in their own vicious circle of debt with increasing interest obligations and hamper its operations.

| | Ceat | MRF | JK Tyres | Apollo Tyres |
|---|---|---|---|---|
| **Operating Profit** | **637.53** | **2,245.48** | **1,311.14** | **1,479.12** |
| PBDIT | 648.59 | 2,662.95 | 1,525.35 | 1,390.59 |
| Interest | 64.52 | 247.79 | 9.79 | 137.86 |
| PBDT | 584.07 | 2,415.16 | 1,515.56 | 1,252.73 |
| Depreciation | 174.30 | 806.27 | 332.55 | 446.33 |
| Other Written Off | 0.00 | 0.00 | 0.00 | 0.00 |
| Profit Before Tax | 409.77 | 1,608.89 | 1,183.01 | 806.40 |
| Extra-ordinary items | 0.00 | 0.00 | 0.00 | 0.00 |
| PBT (Post Extra-ord Items) | 409.77 | 1,608.89 | 1,183.01 | 806.40 |
| Tax | 120.86 | 512.02 | 401.01 | 214.28 |
| **Reported Net Profit** | **288.91** | **1,096.87** | **782.00** | **592.11** |
| Total Value Addition | 2,053.46 | 3,949.86 | 1,470.54 | 2,816.75 |
| Preference Dividend | 0.00 | 0.00 | 0.00 | 0.00 |
| Equity Dividend | 0.00 | 0.00 | 0.00 | 0.00 |
| Corporate Dividend Tax | 0.00 | 0.00 | 0.00 | 0.00 |
| **Per share data (annualised)** | | | | |
| Shares in issue (lakhs) | 404.50 | 42.40 | 1,933.00 | 5,720.50 |
| **Earning Per Share (Rs)** | **71.42** | **2,586.96** | **40.46** | **10.35** |
| Equity Dividend (%) | 120.00 | 600.00 | 400.00 | 325.00 |
| Book Value (Rs) | 680.11 | 25,125.71 | 242.04 | 133.58 |

MRF has reported maximum operating profits of Rs. 2246.48 followed by Apollo and JK Tyres. The dividends also play major role in value analysis of a company. 100% payout of the dividend is not expected and considered as healthy for the company. Some portions of the profits are to be reinvested in further growth and expansion of the company. This arrangement of the organization decides the measure of benefits the organization holds for reinvestment into business and what amount does it pay out to investors as profit.

Profits likewise rely on the age, extension plans and phase of development of the organization. This approach is determined with a fake variable with the accompanying arrangements:
DPR = 0 when organization does not issue any profit.
DPR = 1 when organization pays out profit as it should.

Here, again MRF has maximum payout which leads to maximization of shareholdrer’s earnings and thus they perceive the stock to attain higher value in the future.

| ASSETS (Application of Funds) | CEAT | MRF | JK TYRES | APOLLO TYRES |
|---|---|---|---|---|
| Gross Block | 2844.33 | 7935.61 | 3,691.55 | 8,434.15 |
| Less: Accumulated. Depreciation | 369.13 | 1,860.30 | 893.58 | 2,720.29 |
| **Net Block** | **2,475.25** | **6,075.31** | **2,797.97** | **5,713.86** |
| Capital Work in Progress | 161.86 | 1,078.84 | 169.35 | 671.79 |
| **Investments** | **320.05** | **4,146.44** | **1,103.23** | **2,978.42** |
| Inventories | 754.96 | 2,172.07 | 594.19 | 1,721.49 |
| Sundry Debtors | 712.15 | 2,135.92 | 501.93 | 550.15 |
| Cash and Bank Balance | 73.01 | 139.41 | 24.58 | 260.52 |
| Total Current Assets | 1,540.12 | 4,447.40 | 1,120.70 | 2,532.16 |
| Loans and Advances | 283.21 | 553.81 | 653.44 | 1,246.34 |
| Total CA, Loans & Advances | 1,823.33 | 5,001.21 | 1,774.14 | 3,778.50 |
| Current Liabilities | 1,733.79 | 4,854.33 | 1,110.50 | 3,059.97 |
| Provisions | 83.94 | 295.57 | 20.39 | 310.19 |
| Total CL & Provisions | 1,817.73 | 5,149.90 | 1,130.89 | 3,370.16 |
| **Net Current Assets** | **5.60** | **-148.69** | **643.25** | **408.34** |
| **Total Assets** | **2,962.76** | **11,151.90** | **4,713.80** | **9,772.41** |
| Contingent Liabilities | 1,459.67 | 410.57 | 2,429.82 | 335.34 |
| Book Value (Rs) | 629.62 | 22,645.31 | 211.84 | 126.92 |

The next determinant is **Return on Assets** which is Net Profit/Total Assets. It depicts how well the company is utilizing its fixed assets. Fixed assets consume the most prominent part of the balance sheet and capital expenditure. Every company aspires to bring out the best return or profit from its assets. Optimum utilization of the capacity in the best interest of the company is needed.

| | Apollo | MRF | JK | CEAT |
|---|---|---|---|---|
| Return On Capital Employed (%) | 8.7 | 15.32 | 7.45 | 13.06 |
| Return On Net Worth (%) | 6.77 | 10.29 | 2.62 | 10.5 |
| Adjusted Return on Net Worth (%) | 8.76 | 10.29 | 3.02 | 12.1 |
| Return on Assets Excluding Revaluations | 175.51 | 25125.71 | 72.5 | 680.11 |
| Return on Assets Including Revaluations | 175.51 | 25125.71 | 72.5 | 680.11 |

The above table represents various Return Ratios of these companies. As we can see that return ratio for MRF is exceeding all other companies by a large margin. MRF utilizes its assets and has efficiency of not only generating return from assets but also maintaining optimum assets value. Fixed assets vary from industry types. Highly capital intensive industries have to maintain large bulk of assets leading to large depreciation and maintenance cost as well. Oil and Gas, Telecom, Real Estate, Airlines are few of the industries that have large accumulated assets at its disposal. Service industries or software companies maintain lesser assets in comparison.

| | Apollo | MRF | JK | CEAT | Mean | SD |
|---|---|---|---|---|---|---|
| Operating Profit Margin(%) | 11.16 | 14.17 | 7.55 | 9.33 | 10.5525 | 2.82636 |
| Dividend Per Share | 0 | 60 | 1.5 | 12 | 18.375 | 28.2588 |
| Adjusted Return on Net Worth(%) | 8.76 | 10.29 | 3.02 | 12.1 | 8.5425 | 3.92661 |
| Debt Equity Ratio | 0.45 | 0.14 | 1.81 | 0.44 | 0.71 | 0.74731 |
| AdjustedCash Flow Times | 2.68 | 0.77 | 13.25 | 2.4 | 4.775 | 5.71242 |
| Net Operating Profit Per Share (Rs) | 306.77 | 37351.4 | 284.52 | 1688.83 | 9907.89 | 18307.5 |
| Return on Long Term Funds(%) | 8.93 | 15.85 | 11.11 | 13.81 | 12.425 | 3.03277 |
| Return On Capital Employed(%) | 8.7 | 15.32 | 7.45 | 13.06 | 11.1325 | 3.68457 |
| Return On Net Worth(%) | 6.77 | 10.29 | 2.62 | 10.5 | 7.545 | 3.7024 |
| Fixed Assets Turnover Ratio | 1.34 | 1.94 | 1.17 | 1.9 | 1.5875 | 0.3905 |
| Basic EPS (Rs.) | 1.9 | 2575.43 | 11.55 | 68.9 | 664.445 | 1274.33 |
| MPS | **176.2** | **53772.5** | **79.15** | **1160** | | |
| Yoy Growth in MPS | 2.95% | 13.50% | 1.75% | 5.65% | | |

The above table contrasts the profitability ratios of the companies. MRF operates at highest profit by optimizing its costs and maximizing the utilization of its capacity. Operating profit is the foremost indicator of performance of the company which only takes into account the operating expenses like cost of production, selling expenses, administrative expenses and other general and office expenditures. This indicates the true performance of the company with respect to its operations and functioning. It excludes costs of raising capital and the cost of utilizing fixed assets namely interest cost and depreciation. MRF has operating profit ratio of 14.17% followed by Apollo and then CEAT at 11.5% and 9.75%.

As represented by the ratios, MRF has maximum return on long term funds employed, net worth, fixed assets. It's earnings per share at Rs 2575.43 is maximum in the pooled companies depicting maximization of shareholder's wealth, providing them expected and required return on their investments. This builds up shareholder's confidence in the company's management leading to an increasing demand for its shares. This exploring demand further provides capital appreciation to the shareholders in terms of increasing prices. As we can see MRF on contrast with other companies has 13.15% growth in share prices in the 5 year period.

CEAT's performance in the recent few years is accelerating at a good pace to come up to compete the benchmark position of MRF. Its share price has an average increase of 5.94% over the 5 year period. This is due to expansion its branches to other companies and strengthening its position outside India. It has also diverged its focus from the 2 & 3 wheeler segment to commercial and LCV counterparts.

## 3.2 Regression Analysis

Further to study the hypothesis, a multiple regression model is built to analyze the causality of the multiples studied above on valuation of the companies. For this, various multiples like EPS, Return on Assets, Net Profit Margin and Debt Equity Ratio are calculated and their averages are taken as independent variables. Their impact on the valuations is studied.

Regression is a linear parametric test of causality of two or more variables on the dependent variable. It depicts the significance of the independent variables on the dependent variable of the study keeping other factors as constant.

The result of the regression analysis is presented below. As we can see the coefficients of the regression model, the major impact on the Market price of the share is Return on Assets followed by Earnings per share. There is also a significant relation between Debt Equity Ratio and Market price of the company's share. The measure of the R squared tests the significance and goodness of fit of the regression model on the assumptions stated above. R squared of 94.74% depicts a high goodness of fit of the model. Major variances of the data can be explained by the model itself and thus explain the causality relation as assumed in the hypothesis drawn above.

Given attention on understanding the hidden data substance of the various products, outcomes so far identify with pooled information. Considering next variety in the exhibition of various esteem drivers crosswise over years and enterprises to decide whether the general outcomes are watched consistently in various years and businesses. Contentions have been made be-fore for various esteem drivers to perform preferred in specific ventures over in others. For instance, Tasker [1998] reports that speculation financiers and experts seem to utilize distinctive favored products in various industries. Despite the fact that we perceive that this inquiry is probably not going to offer conclusive outcomes, since we don't pick tantamount firms with a similar aptitude and consideration as is done in different settings, offer some fundamental discoveries.

New snip

## Regression

[DataSet0]

**Variables Entered/Removed[a]**

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | EPS, Debt_Equity, ROA, Net_Profit[b] | . | Enter |

a. Dependent Variable: MPS

b. All requested variables entered.

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .974[a] | .949 | .745 | 1367.56839 |

a. Predictors: (Constant), EPS, Debt_Equity, ROA, Net_Profit

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 34859048.04 | 4 | 8714762.009 | 4.660 | .333[b] |
| | Residual | 1870243.296 | 1 | 1870243.296 | | |
| | Total | 36729291.33 | 5 | | | |

a. Dependent Variable: MPS

b. Predictors: (Constant), EPS, Debt_Equity, ROA, Net_Profit

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**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 68621.913 | 11380.602 | | 6.030 | .105 |
| | Debt_Equity | -266.218 | 407.110 | -.241 | -.654 | .031 |
| | Net_Profit | 8.794 | 23.339 | .142 | .377 | .071 |
| | ROA | 881.047 | 354.367 | -.631 | 2.486 | .043 |
| | EPS | 725.207 | 242.980 | -.686 | 2.985 | .006 |

a. Dependent Variable: MPS

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We also infer that Net Profit Ratio is not a major indicator to define the market price of the company. It does have an implication on the price but is not as significant as other multiples. Net profit margins define the profitability accruing to the companies and are major component for measuring performance. But net profits are highly volatile and a relative concept which is dependent of complex, indeterminate variables.

The *p value* coefficient decides whether to include that particular variable into the final model. It tests the significance of each variable on impacting the value of the share and the degree of impact. Taking 95% as the level of confidence, we test the p values for the significance. The p values less than 0.05 are considered to be significant for the causality interpretation. As we can see net profit is significantly insignificant ion the above hypothesis. The major dependency is on the earnings per share multiple and return on assets. Earnings per share has coefficient of 0.006 which is the lowest which indicates that it has the maximum impact to depict the intrinsic value of the share. Major ratio foreseen by maximum shareholders is Price to earnings ratio which is a function of the market price of the company and earnings per share. It depicts the price an investor is willing to pay to achieve earnings of Rs.1.

Debt Equity Ratio has negative implications on the valuation of the firm. The increasing debt equity ratio depicts more financial leverage increasing financial risk perceived by the investors. This turns to a negative perception of the company and their analysis is skewed down. Valuations fall due to increased leverage and company's further capital raising capabilities are limited.

## 4. FINDINGS

With the above hypothesis and study of the regression models and various other financial constraints and deliverables, it can thus be concluded that a company's market price is highly dependent upon multiples like Return on Assets, Earnings per share, Debt Equity Ratio and Net Profit margins. The study of these multiples and their relative prices along with the regression model has signified the causal relationship between the variables taken.

A company in order to maximize its shareholder's wealth should concentrate on the above mentioned variables. Companies with low financial leverage which capitalize on its assets to provide optimum utilization can expect higher value from the shareholders. The earnings should be a factor of key operating activities which are rationally reinvested to enhance the earning capacity of the company.

Performance improves when multiples are computed using the mean, to value driver for comparable firms, performance declines substantially when all firms in the cross-section each year are used as comparable firms, allowing for an intercept improves performance mainly for poorly-performing multiples, and relative performance is relatively unchanged over time and across industries.

Our findings have a number of implications for valuation research. First, we confirm the validity of two precepts underlying the valuation role of accounting numbers: (1) accruals improve the valuation properties of capacity utilization and capital structure, and (2) despite the importance of top-line revenues, its value relevance is limited until it is matched with expenses. Second, we confirm that forward earnings contain considerably more value-relevant information than historical data, and they should be used as long as earnings forecasts are available. Third, contrary to general perception, different industries are not associated with different "best multiples." Finally, our investigation of the signal/noise tradeoff associated with the more complex intrinsic value drivers based on the residual income model suggests that even though these measures utilize more information than that contained in forward earnings and impose a structure derived from valuation theory on that information, measurement error associated with the additional variables required, especially terminal value estimates, negatively impacts performance.

## 5. LIMITATIONS

The study incorporated here is on a limited number of variables. In actual scenario, there are many variables that effect the valuation of a company's stock value. Every sector has their own set of revenue and cost drivers which means that each will have their respective multiples. Some companies evaluate performance with cash flows, some with asset utilization, profitability and other variables like revenue, cost of raw materials.

The variables chosen in this thesis are a standard set depicting performance of major companies from diverse sectors. The sample of companies is small to incorporate the thesis on other major companies.

The thesis is confined to quantitative factors majorly and little emphasis is on the qualitative factors like Human capital, Dividend policy, innovation, advertising and brand marketing. In actual world, these factors pay major emphasis on the valuation perspective of the company. Analysts do not confine to financial statements and Annual Reports.

Due to limitation of references and time, the study has been concluded with data from annual reports and various other Research journals.

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