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Reference
1.1 INTRODUCTION:

The domains of astronomy, cosmic science, metaphysics, mythology, natural sciences, ancient scriptures, world history in general and scientific discoveries and inventionaries in particular – “all uniformly acknowledge the concept and metaphor of sphere or globe to be holding all the facts and mysteries that surround the emergence of cosmos and consequently, the existence of the universe in general and our earth in particular”. The very idea of our world being a globe is extraordinarily supportive of evidential truth that our life surrounds something circular and spherical and that it is a circle from which emanates the essence of human life as well as other micro and macro organisms.

It is a circle that is essentially the driving force of life as tenets of biology and mechanics, the domains of nuclear physics and mathematics, almost all branches of studies have laid down greater emphasis on prominence of zero, cipher, embryo, circle, wheel, gyre, orbital objects and all possible instruments in motion. In short, it is the circle that makes an object or individual kinetic from the primordial static condition which is considered the beginning of life.

In the light of above assertions it would be an appropriate gesture to coat very famous hymn from one of the most celebrated scriptures “Ishavasyopnishad”.

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शातः शातः शातः शातः

Summary of this Purnamadah mantra is: Aum that Brahman is infinite, and this Brahma is infinite. That infinite evolves from the infinite. Even if you take the infinite (conditioned Brahman) from the infinite, the infinite (unconditioned Brahman) still remains!

This proves that ancient knowledge of life emphasizes the idea of totality and completeness. The invention of wheel is a mere extension of the very idea of motion, speed, and kinetics. Precisely for this reason it should not have been called an invention, rather it is a mere discovery of the notion that life has to move on and that what is alive can’t afford to remain static. In other words, discovery of wheel is an act of materializing the natural objects into manmade objects. Discovery of wheel further proves that man is able to translate natural realities into human realities.
Thus, the discovery of wheel is considered one of the brilliantly path-breaking chapters in the history of mankind. On one hand, it gave basic movements to objects, on the other hand it is perhaps the only discovery that has been constantly improvises upon from ages to ages, and from generation to generation. An ordinary wheel initially was used for the purpose of carting and irrigation. Over a period of time, it became an instrumental as prime means of transportation of goods and humans. Throughout the ages of the history of mankind, it has existed in various forms that have catered to diverse needs of races and cultures across the globe.

1.2 ORIGIN AND CONCEPT OF WHEEL AND ENGINE:

A circular frame of hard material that may be solid, partly solid, or spoked and that is capable of turning on an axle is known as “wheel”.

The spoked wheels appeared about 2000 BC, when they were in use on chariots in Asia Minor. Later developments included iron hubs (centerpieces) turning on greased axles, and the introduction of a tire in the form of an iron ring that was expanded by heat and dropped over the rim and that on cooling shrank and drew the members tightly together.

The use of a wheel (turntable) for pottery had also developed in Mesopotamia by 3500 BC.

The most accepted idea is that the wheel was developed from tree trunks and used as rollers. But there are no ancient drawings to sustain the theory. The oldest surviving wheels were found in Mesopotamian tombs between 3000 to 2000 BC. These were made of three strips of wood clasped together with cross-struts and with a natural knothole in the central plank, which acted as the pivot. This wheel turned on a fixed axle, and the wood around the axle was very tough and wear resistant.

Because the wheel made controlled rotary motion possible, it was of decisive importance in machine design. Rotating machines for performing repetitive operations driven by steam engines were important elements in the Industrial Revolution. Rotary motion permits a continuity in magnitude and direction that is impossible with linear motion, which in a machine always involves reversals and changes in magnitude.

Engine:
A wide range of engines has been used experimentally and in automotive production. The most successful for automobiles has been the gasoline-fueled reciprocating-piston internal-combustion engine, operating on a four-stroke cycle, while diesel engines are widely used for trucks and buses. The gasoline engine was originally selected for automobiles because it could operate more flexibly over a wide range of speeds, and the power developed for a given weight engine was reasonable; it could be produced by economical mass-production methods; and it used a readily available, moderately priced fuel.
Reliability, compact size, exhaust emissions, and range of operation later became important factors.

There has been an ongoing reassessment of these priorities with new emphasis on the reduction of greenhouse gases or pollution-producing characteristics of automotive power systems. This has created new interest in alternate power sources and internal-combustion engine refinements that previously were not close to being economically feasible. Several limited-production battery-powered electric vehicles are being marketed. They have not proved to be competitive, because of costs and operating characteristics. The gasoline engine, with new emission-control devices to improve emission performance, has been challenged in recent years by hybrid power systems that combine gasoline or diesel engines with battery systems and electric motors. Such designs are, however, more complex and therefore more costly.

1.3 DEFINITION OF AUTOMOBILE

Motorized vehicle consisting of two or more wheels and powered by internal engine, which are used to transport people and items from one location to another location is called “Automobile”. After years or various designs, inventors were able to develop a functional general design that is utilized by major automakers as the foundation of their designs. Automobiles generally use gasoline to fuel the internal engine, but technological advances have led to the design of vehicles that run on electricity and even on water.

1.4 HISTORY OF THE AUTOMOBILE INDUSTRY:

The history of the automobile begins as early as 1769, with the creation of steam engine automobiles capable of human transport. In 1806, the first cars powered by an internal combustion engine running on gas appeared, which led to the introduction in 1885 of the ubiquitous modern gasoline- or petrol-fueled internal combustion engine. Cars powered by electric briefly appeared at the turn of the 20th century, but largely disappeared from use until the turn of the 21st century. The need to reduce the amount of air pollution generated by transportation has raised new interest in electric and hybrid vehicles. The early history of the automobile can be divided into a number of eras, based on the prevalent method of automotive propulsion during that time. Later periods were defined by trends in exterior styling, and size and utility preferences.

The first practical automobile with a petrol engine was built by Karl Benz in 1885 in Mannheim, Germany. Benz was granted a patent for his automobile on 29 January 1886, and began the first production of automobiles in 1888, after Bertha Benz, his wife, had proved with the first long-distance trip in August 1888 (from Mannheim to Pforzheim and back) that the horseless coach was absolutely suitable for daily use. Since 2008 a Bertha Benz Memorial Route commemorates this event.

Soon after, Gottlieb Daimler and Wilhelm Maybach in Stuttgart in 1889 designed a vehicle from scratch to be an automobile, rather than a horse-
drawn carriage fitted with an engine. They also are usually credited as inventors of the first motorcycle, the Daimler Reitwagen, in 1885, but Italy's Enrico Bernardi, of the University of Padua, in 1882, patented a 0.024 horsepower (17.9 watt) 122 cubic centimeter cc (7.4 cubic inch) one-cylinder petrol motor, fitting it into his son's tricycle, making it at least a candidate for the first automobile, and first motorcycle; Bernardi enlarged the tricycle in 1892 to carry two adults.

Starting its journey from the day when the first car rolled on the streets of Mumbai in 1898, the Indian automobile industry has demonstrated a phenomenal growth to this day. Today, the Indian automobile industry presents a galaxy of varieties and models meeting all possible expectations and globally established industry standards. Some of the leading names echoing in the Indian automobile industry include Maruti Suzuki, Tata Motors, Mahindra and Mahindra, Hyundai Motors, Hero Honda and Hindustan Motors in addition to a number of others.

During the early stages of its development, Indian automobile industry heavily depended on foreign technologies. However, over the years, the manufacturers in India have started using their own technology evolved in the native soil. The thriving market place in the country has attracted a number of automobile manufacturers including some of the reputed global leaders to set their foot in the soil looking forward to enhance their profile and prospects to new heights. Following a temporary setback on account of the global economic recession, the Indian automobile market has once again picked up a remarkable momentum witnessing a buoyant sale for the first time in its history in the month of September 2009.

The economic liberalization that dawned in India in the year 1991 has succeeded in bringing about a sustained growth in the automotive production sector triggered by enhanced competitiveness and relaxed restrictions prevailing in the Indian soil. A number of Indian automobile two wheeler manufacturers including Hero Honda Motors Ltd and Bajaj Auto Ltd have dramatically expanded their operations. The two wheeler companies have paved a solid road to the further expansion of its domestic automobile market. This segment has in fact invited a huge amount of India-specific investment by a number of multinational automobile manufacturers.

The beginnings of automotive industry in India can be traced during 1940s. After the nation became independent in the year 1947, the Indian Government and the private sector launched their efforts to establish an automotive component manufacturing industry to meet the needs of the automobile industry. The growth of this segment was however not so encouraging in the initial stage and through the 1950s and 1960s on account of nationalization combined with the license raj that was hampering the private sector in the country. However, the period that followed 1970s, witnessed a sizeable growth contributed by tractors, scooters and commercial vehicles. Even till those days, cars were something of a sort of a major luxury. Eventually, the country saw the entry of Japanese manufacturers establishing Maruti Udyog.
During the period that followed, several foreign based companies started joint ventures with Indian companies.

During 1980s, several Japanese manufacturers started joint-ventures for manufacturing motorcycles and light commercial-vehicles. During this time, that the Indian government selected Suzuki for a joint-venture to produce small cars. Following the economic liberalization in 1991 and the weakening of the license raj, several Indian and multi-national car companies launched their operations on the soil. After this, automotive component and automobile manufacturing growth remarkably speeded up to meet the demands of domestic and export needs.

Experts have an opinion that during the early stages the policies and the treatment by the Indian government were not favorable to the development of the automobile industry. However, the liberalization policy and various tax reliefs announced by the Indian government over the recent past have pronounced a significantly encouraging impact on this industry segment. Estimates reveal that owing to several boosting factors, Indian automobile industry has been growing at a pace of about 18% per year. Therefore, global automobile giants like Volvo, General Motors and Ford have started looking at India as a prospective hot destination to establish and expand their operations. One can say that the automobile industry in the country has occupied a solid space in the platform of Indian economy. Empowered by its present growth, today the automobile industry in the country can produce a diverse range of vehicles under three broad categories namely cars, two-wheelers and heavy vehicles.

1.5 MODERN GLOBAL AUTOMOBILE INDUSTRY

The globalization of the automotive industry has greatly accelerated during the last half of the 1990's due to the construction of important overseas facilities and establishment of mergers between giant multinational automakers.

In looking at trends in global automobile manufacturing, Japanese automakers have been leaders in stream-lined manufacturing process systems. These methods have been adopted by manufacturing plants worldwide. These efforts were pursued in order to increase productivity and product quality. U.S. and European automakers initially showed considerable gaps in manufacturing plant productivity, however the gap in productivity with Japanese automakers’ assembly plants have been narrowed substantially in the last several years.

Increasing global trade has enabled the growth in world commercial distribution systems, which has also expanded global competition amongst the automobile manufacturers. Japanese automakers in particular, have instituted innovative production methods by modifying the U.S. manufacturing model, as well as adapting and utilizing technology to enhance production and increase product competition.
Global Market Dynamics - The world's largest automobile manufacturers continue to invest into production facilities in emerging markets in order to reduce production costs. These emerging markets include Latin America, China, Malaysia and other markets in Southeast Asia.

1.6 TWO WHEELERS IN INDIA

India is the second largest producer of two-wheelers in the world. In the last few years, the Indian two-wheeler industry has seen spectacular growth. The country stands next to China and Japan in terms of production and sales respectively.

Majority of Indians, especially the youngsters prefer motorbikes rather than cars. Capturing a large share in the two-wheeler industry, bikes and scooters cover a major segment.

Bikes are considered to be the favorite among the youth generation, as they help in easy commutation. Large varieties of two wheelers are available in the market, known for their latest technology and enhanced mileage. Indian bikes, scooters and mopeds represent style and class for both men and women in India.

Benefits of Two Wheelers
Two-wheelers are the most popular and highly sought out medium of transport in India. The trend of owning two-wheelers is due to its-

- Economical price
- Safety
- Fuel-efficient
- Comfort level

However, few Indian bike enthusiasts prefer high performance imported bikes. Some of the most popular high-speed bikes are Suzuki Hayabusa, Kawasaki Ninja, Suzuki Zeus, Hero Honda Karizma, Bajaj Pulsar and Honda Unicorn. These super bikes are specially designed for those who have a zeal for speedy drive. Browse through the pages and catch all the details of high-performance two wheelers in India. Know more about latest launches and happenings in two wheelers industry.

Key players in Two Wheeler Automobile Industry

India is the second largest producer of two-wheelers in the world. In the last few years, the Indian two-wheeler industry has seen spectacular growth. The country stands next to China and Japan in terms of production and sales respectively.
Table No. 1.1 The Key Players in Two Wheeler Automobile Industry.

<table>
<thead>
<tr>
<th>Two Wheeler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bajaj Auto</td>
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<tr>
<td>Electrotherm</td>
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<tr>
<td>Hero Honda</td>
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<tr>
<td>Honda</td>
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<td>HMSIL</td>
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<td>Hero Electric</td>
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<td>Kinetic</td>
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<td>India</td>
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<td>LML</td>
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<tr>
<td>Monto</td>
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<tr>
<td>Royal Motor</td>
</tr>
<tr>
<td>Suzuki</td>
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<td>Yamaha</td>
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<td>Mahindra2</td>
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</table>

1.7 PROFILE OF THE SAMPLE COMPANIES

(A) HERO HONDA MOTORS LIMITED:

Hero Honda Motors Ltd is the World's single largest two-wheeler motorcycle company. Honda Motor Company of Japan and the Hero Group entered a joint venture to setup Hero Honda Motors Limited in 1984. The joint venture between India's Hero Group and Honda Motor Company, Japan has not only created the world's single largest two wheeler company but also one of the most successful joint ventures worldwide.

During the 80s, Hero Honda became the first company in India to prove that it was possible to drive a vehicle without polluting the roads. The company introduced new generation motorcycles that set industry benchmarks for fuel thrift and low emission. A legendary 'Fill it - Shut it - Forget it' campaign captured the imagination of commuters across India, and Hero Honda sold millions of bikes purely on the commitment of increased mileage.

Over 20 million Hero Honda two wheelers tread Indian roads today. These are almost as many as the number of people in Finland, Ireland and Sweden put together. Hero Honda has consistently grown at double digits since inception; and today, every second motorcycle sold in the country is a Hero Honda. Every 30 seconds, someone in India buys Hero Honda's top -selling motorcycle – Splendor. This festive season, the company sold half a million two wheelers in a single month—a feat unparalleled in global automotive history.

Hero Honda became the first company in the country to introduce four-stroke motorcycles and set the standards for fuel efficiency, pollution control and quality. It has an excellent distribution and service network spread throughout the country.
Hero Honda bikes currently roll out from its three globally benchmarked manufacturing facilities. Two of these are based at Dharuhera and Gurgaon in Haryana and the third state of the art manufacturing facility was inaugurated at Haridwar, Uttarakhand in April this year. These plants together are capable of producing out 4.4 million units per year.

Having reached an unassailable pole position in the Indian two wheeler market, Hero Honda is constantly working towards consolidating its position in the market place. The company believes that changing demographic profile of India, increasing urbanization and the empowerment of rural India will add millions of new families to the economic mainstream. This would provide the growth ballast that would sustain Hero Honda in the years to come. As Brijmohan Lal Munjal, the Chairman, Hero Honda Motors succinctly points out, "We pioneered India's motorcycle industry, and it's our responsibility now to take the industry to the next level. We'll do all it takes to reach there."

Product range of the company includes:

- CD Dawn
- CD Deluxe
- Pleasure
- Splendor +
- Splendor NXG
- Passion PRO
- Passion Plus
- Super Splendor
- Glamour
- Glamour PGM FI
- Achiever
- CBZ Extreme
- Hunk
- Karizma

(B) BAJAJ AUTO LTD

Bajaj Auto Ltd is a part of Bajaj Group. It was founded by Jamnalal Bajaj at Rajasthan. Bajaj Auto Ltd came into existence on 29 November 1945 as M/s Bachraj Trading Corporation Private Limited. It started off by selling imported two- and three-wheelers in India. In 1959, it obtained a license from the government of India to manufacture two- and three-wheelers and it went public in 1960. Till 1959, they imported scooters and three-wheelers from Italy and sold them in India. The company got a production license in the year 1959 and fastened a technical collaboration with Italian PIAGGIO in 1960.

Bajaj Auto Ltd. is one among India's top ten companies in terms of market capitalization and among the top five in terms of annual turnover.

The company started producing scooters in the year 1961 and followed three-wheelers production in 1962. Its collaboration with Piaggio expired in 1971 and since then, their scooters and three-wheelers are being sold with the
brand name “BAJAJ”. The first production unit is located at Satara, Maharashtra. In 1984, the second production plant was set up at Aurangabad, Maharashtra. This plant started scooter production in 1986, three-wheeler production in 1987 and scooterettes and motorcycle facilities were commissioned in 1990 & 1991 respectively.

Today, the company has become a market leader with annual production in excess of 1.35 million units which was about 4000 units in 1961. These days, Bajaj Auto Ltd. has started offering products in all segments (mopeds & scooterettes, scooters, motorcycles, three wheelers). Now the company is headed by Rahul Bajaj.

Product range of the company includes:

- Vespa 150 - under the licence of Piaggio of Italy
- Bajaj Super
- Bajaj Priya
- Kawasaki Bajaj KB
- Bajaj Sunny
- Kawasaki Bajaj 4S Champion
- Bajaj Classic
- Bajaj Super Excel
- Kawasaki Bajaj Boxer,
- Kawasaki Bajaj Caliber, Bajaj Legend,
- Bajaj Spirit
- Kawasaki Bajaj Wind 125, Bajaj Pulsar DTS-i, Bajaj Endura FX
- Bajaj CT 100, New Bajaj Chetak 4-stroke withWonder Gear, Bajaj Discover DTS-i
- Bajaj Wave, Bajaj Avenger, Bajaj Discover 112

Looking to the growth of automobile two wheeler industries especially after the implementation of liberalization policy, the researcher got hunch to know the impact of capital structure of automobile two wheeler companies on companies’ profitability, liquidity and solvency. Thus first of all it is important to know the concept, various approaches, factors, components, Importance, Theories of capital structure and Capitalization.

1.8 CONCEPT OF CAPITAL STRUCTURE

The financial objective of any business organization is to employ funds in the proportion necessary to increase the productivity of the remaining factors of the production over the long run. Given the objective of the firm to maximize the value of the firm, the firm should select a capital structure which will help in achieving this objective of financial management.

Capital structure refers to the long term source of funds such as equity share capital (including reserves & surplus). Preference share capital, debentures and long term debts. Capital decision refers to the way in which its long term
obligations are distributed between different classes of owners and creditors. So capital structure decision is to decide the right mixture of debt and equity in such a manner that, equity share holders of a company get the maximum return on their investments in the company in form of dividend and capital appreciation.

Selecting the proper financing instrument is a two-step process. The first step is to decide how much funds are required frequently and this is the straightforward outcome of the forecasting and budgeting process. Once this decision is made second step is to determine the appropriate amount of different sources of finance for satisfying investment needs of the firm. The decision made in this respect is known as capital structure decision. This is the heart of the financing decision. The proper choice will provide the company with required cash on attractive terms and improper choice may result in excessive cost, under risk or an inability to sell the securities.

Financial experts, however, differs in respect of composition of funds in capital structure. Guthman and Doughall state that “Phrase capital structure may be used to cover the total investment of bond holders including any long term debts such as mortgages and long term loans as well as total stock holder,’s investments including retained earning as well as original investment. This view is also held by walker. In contrast, Osburn “ capital structure as financial plan according to which all assets of a company are furnished” this capital is supplied by long term and short term borrowings, the sale of common and preferred stock and reinvestment of earnings. Nevertheless both these concepts of capital structure are correct; however, the former concept is widely accepted.

1.9 COMPONENTS OF CAPITAL STRUCTURE

A financial manager has to assemble funds from numerous sources to satisfy varied financial needs of the firm. A firm requires long term funds to acquire fixed assets and to carry a portion of current as permanent investment in fixed assets to ensure uninterrupted and smooth flow of business activity. It requires short terms funds also to cover day to day business needs. Frequently, the firm may need medium term capital for a period of three to five years for financing aggressive advertising campaign and for complete over hauling of its machines and equipment. Among these different kinds of capital requirement, needs for acquiring fixed assets are of considerable significance because an amount of funds has to be arranged for a long period of time. When a firm wants to invest in long term assets, it must find the means to finance them. The firm can rely to some extent on funds generated internally. However, in most cases internal sources are not enough to support investment plan. When that happens the firm may have to curtail its investment plans or seek external funding. Most firms choose the latter course of action. The firms supplement internal funding with external funding raised from a variety of sources. For this purpose, the general investing public, government and financial institution are approached frequently. The most popular media of acquiring funds from these sources are share and
debenture. Considering varied notions and desires of investors the company floats different kinds of securities to garner savings of the investors. These securities, therefore, constitute capital structure of a company. Thus, capital structure represents owned as well as borrowed funds.

**OWNER’S FUNDS COMPRISE**
- Equity share capital
- Preference share capital
- Free reserve and surplus

**BORROWED FUNDS COMPRISE**
- Debenture
- Long term loans
- Other debts

The decision regarding mix of capitalization is called capital structure decision. This decision should be taken after considering pros and cons of each source.

**1.9.1 OWNER’S FUNDS:**

**EQUITY CAPITAL**
Equity shares represent the ownership position in a company. It is considered as a cornerstone of the financial structure of a company without which the company cannot be founded. Equity share holders are the legal owners of the company. Ordinary shares are the source of permanent capital since they do not have a maturity date so it can be invested in building long-term investments like fixed assets. Management procures debt and preference share capital against of these shares. It does not involve any fixed obligation for payment of divided. It is an appropriation of profit unlike interest on debt which is charge on profits.

On the other hand, the cost of equity capital is high: the rate of return required by equity share holders is generally higher than the rate of return required by other investors. Secondly equity dividends are payable from post-tax earnings. They are not tax-deductible payments, issuing such as underwriting commission: brokerage and other issue expenses are higher in case of equity shares compared to other securities. Sale of equity stock to outsiders may result in dilution of control of the existing shareholders.

**PREFERENCE CAPITAL**
Preference capital represents that part of share capital of a company which carries preference rights and privileges with respect to income and assets over equity stock. Preference capital represents a hybrid form of financing. It has some characteristics of equity and some attributes of debentures. It resembles equity in the following ways: (i) preference dividend is payable only out of distributable profits (ii) preference dividend is not an obligatory payment.(iii) preference dividend is not a tax-deductible payment. On the other hand; it is similar to debentures in several ways: (i) the dividend rate on
preference capital is usually fixed (ii) the claim of preference share holders is prior to the claim of equity share holders. (iii) preference share holders do not normally enjoy the right to vote and (iv) preference share holders do not share in the residual earnings.

In recent years preferred shares are becoming popular instrument for corporate India to raise funds. It is flogged by fast-rising interest rates and hungry for short-term cash. Corporate India is exhuming a money mopping device long buried under the first ground laid by free pricing of equity and the preference shares.

A large number of business organizations such as Reliance Industries, MAC Industries, Mysore cement, DCM, Bajaj Auto, Lloyds’ steel, SRF, Bombay dyeing, Mahindra and Mahindra etc. have issued preference shares.

One of the prominent factors responsible for increasing popularity of preference shares is cheaper cost against the backdrop of debts having spiraled from 18% in the 1995 to 22% in 1998 and cost of loan from inter-deposit market cost having gone up to almost 28% today whereas preference shares involve the paying of dividends of only about 13% resulting in to fat savings. Secondly, there is no legal obligation to pay dividend. A company does not face bankruptcy if it skips preference dividends. There is no redemption liability in the case of perpetual preference shares even in the case of redeemable preference shares, financial distress may not be much because periodic sinking funds payments are not required and redemption can be delayed without significant penalties. Preference capital is generally regards as part of net worth. Hence, it enhances the creditworthiness of the firm. Preference shares do not under normal circumstances carry voting right. Hence, there is no dilution of control. No collateral is pledged in favour of preference share holders. Hence, the mortgage able assets of the firm are conserved.

Preference capital, however suffers from serious short comings. Dividend to be paid on preference shares is not tax-deductible. Though there is no legal obligation to pay preference dividends, skipping them can adversely affect the image of the firm in the capital.

**RETAINED EARNINGS**
Depreciation charges and retained earning are also a part of the internal sources of finance available to the company. Retained earnings are viewed very favourably by most corporate managements because retained earnings are readily available internally. Retained earnings effectively represent infusion of additional equity in the firm. Use of retained earnings in lieu of external equity eliminates issue costs and losses on account of under pricing. There is no dilution of control when firm relies on retained earnings.

On the other hand, the amount that can be raised by way of retained earnings may be limited. Further, the quantum of retained earnings tends to be highly variable. The opportunity cost of retained earnings is quite high. Retained earnings in essence represent dividends foregone by equity share holders.
1.9.2 BORROWED FUNDS

DEBENTURES/BONDS
Akin to promissory notes, debentures are instruments for raising long term debt capital. The firm promises to pay interest and principal as stipulated. Debenture holders are creditors of the company. An alternative form of debentures is bonds are issued mostly by public sector companies in India. In USA, the term debenture is generally understood to mean unsecured bond. Debentures are favourable to issuing company in several ways. The specific cost of debt, represented by debentures, is lower than the cost of equity capital. This is because the interest on debentures is tax deductible and hence the effective post tax cost of debenture is lower. Debenture financing does not result in dilution of control since debenture holders are not entitled to vote. The fixed monetary burden associated with debenture financing, irrespective of changes in price level, has appealed to many companies.

On the other hand, the debenture interest and capital repayments are obligatory payments. Failure to meet these payments can cause a great deal of embarrassment. The protective covenants attached to a debenture issue may be restrictive. Debenture financing enhances the financial risk associated with the firm. This may increase the cost of equity capital.

TERM LOANS
Term loans represent a source of debt finance which is generally repayable in more than one year but less than 10 years which are obtained from the banks and financial institutions. In India, they are generally obtained for financing large expansion, modernization or diversification projects. Therefore, it is also known as project financing.

In post-tax terms, the cost of term loans is lower than the cost of equity capital or preference capital. Term loans do not result in dilution of control, as lenders do not have right to vote.

On the other hand, the principal and interest payments on term loans are obligatory payments. Failure to meet these payments may threaten the existence of the firm as term loans increase the financial risk of the firm. This, in turn tends to raise the cost of equity capital. Term loan contracts also carry restrictive covenants which may reduce managerial freedom. Further, they entitle the lenders to put their nominees on the board of the borrowing company.
### COMPARISON OF COMPONENTS OF CAPITAL STRUCTURE

<table>
<thead>
<tr>
<th>Sources of Finance</th>
<th>Cost</th>
<th>Dilution of control</th>
<th>Risk</th>
<th>Restraint on managerial freedom</th>
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<tbody>
<tr>
<td>Equity capital</td>
<td>High</td>
<td>Yes</td>
<td>Nil</td>
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<td>Preference Capital</td>
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<td>Debentures</td>
<td>Low</td>
<td>No</td>
<td>High</td>
<td>Some</td>
</tr>
<tr>
<td>Term loans</td>
<td>Low</td>
<td>No</td>
<td>High</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

## TRADING ON EQUITY

The use of fixed-charge sources of funds, such as debt and preference capital along with owner’s equity in capital structure is known as financial leverage or trading on equity. Trading on equity is the financial process of using debt to produce gain for the residual owners. It acts as a lever to magnify the influence of fluctuation in earnings. Larger the magnitude of debt in capital structure, the higher is the variation in EPS given any variation in EBIT. So increased use of debt is useful as long as borrowed capital can be made to pay more than what it costs. It will lead to decrease in profitability rate when it costs more than what it earns. So the firm’s financing decision is whether to raise all funds by equity issues, or to use fixed charge sources or to use combination of the two in proper proportion. The EPS also increases when the preference share capital is used to acquire assets. But the leverage impact is more pronounced in case of debt because (i) the cost of debt is usually lower than the cost of preference share capital and (ii) the interest paid on debt is tax deductible.

## 1.10 IMPORTANCE OF CAPITAL STRUCTURE DECISION

Capital structure decision is a crucial financial decision as it directly affects growth rate of the company, its credit standing, share prices and ultimately overall value of the company. Once the funds requirements of the enterprise are determined, finance manager has to decide the make-up of capitalization in such a way as to minimize cost of funds and maximize return without exposing the firm to risk.

In capital structure decision a finance manager is primarily concerned with determining the best financing mix for his firm. Any error, in this respect may jeopardize financial stability of the firm and land it in grave financial crisis. Here, the question is how much financial leverage a company should employ to increase shareholders’ wealth or what should be the proportion of various long-term funds. This can be answered by understanding the relationship between financial leverage and cost of capital or between financial leverage and company valuation. Valuation and cost of capital are inversely related. The company has to plan its capital structure initially at the time of its promotion. Subsequently whenever funds have to be raised to finance
investments; a capital structure decision is involved. A demand for raising funds generates a new capital structure since a decision has to be made as to the quantity and forms of financing. This decision will involve an analysis of the existing capital structure and factors affecting it.

Each new financing decision affects its debt-equity mix. The debt-equity mix in turn, affects shareholders earnings and risk, which will affect the cost of capital and market value of the company. Dividend decision is a financing decision. The company’s decision to retain or distribute earnings affects the owner’s claims. Retention of earnings strengthens the position of shareholder’s equity. Thus, dividend decision affects capital structure.

1.11 APPROACHES TO ESTABLISH APPROPRIATE CAPITAL STRUCTURE

The company needs funds to finance its activities continuously. Every time when funds have to be procured, the pros and cons of various sources of finance should be weighed and the most advantageous source should be selected. Thus, the capital structure decision is a continuous process. Every time when a firm needs funds this decision should be taken.

The choice of financing mix is a problem which cannot be solved in general term or by any simple formula or approach. One has to analyze all the alternatives. The final choice has to be left to individual judgement in each particular case. But at the same time, if the analysis of these considerations is carried out in an objective manner, the resulting capital structure is likely, within limits to fit into a general pattern suited to the character of the industry in which the company operates. Broadly speaking there may be four fundamental patterns of capital structure in a concern.

(i) Financing of capital requirements exclusively by equity stock,
(ii) Financing of capital requirements by equity and preferred stock,
(iii) Financing capital needs by equity stock and debt,
(iv) Financing capital needs by equity, preferred stocks and debt.

The following are the most common approaches to decide about a firm’s capital structure.

1.11.1 PROFITABILITY APPROACH

The analysis of profitability or income may be made by the following four methods:

Earnings per share (EPS)
Explicit cost of new capital
EBIT — EPS analysis
EPS Volatility

NEW FINANCING AND EARNING PER SHARE

For analyzing the effect of new financing decisions on the interest of the ordinary share holders it is relevant to calculate earnings per share. As per
this approach various options of financing and its effect on final EPS is considered. The financing plan giving highest value of EPS is selected.

ASSESSMENT OF EXPLICITE COST OF NEW CAPITAL
A number of problems are involved in measuring the cost of various types of capital. While taking capital structure decision the company is concerned with the problem of dilution in EPS which represents the explicit cost of raising various types of capital from the ordinary shareholder’s point of view. To assess the explicit cost of various types of capital is to determine the rate of return at which new funds raised by the issue of various types of securities can be employed to offset the initial dilution. However, the definition of dilution in terms of EPS alone to describe capital cost is over-simplification. A broader definition of dilution is necessary to examine its effects on the shareholder’s overall position.

EBIT-EPS ANALYSIS
In the Search for an appropriate capital structure it needs to, inter-alia how sensitive is earning per share to changes in earnings before interest and tax under different financial alternatives. A financial executive faced with the problem of selecting financial mix will be interested to make calculations of potential EPS at various probable EBIT level and also EPS results at the EBIT extremes (the best and the worst probable EBITs). EBIT-EPS analysis is an important tool to get an insight into the firm’s capital structure management.

The break—even EBIT for two financing plans is the level of EBIT for which the EPS is the same under both the financing plans irrespective of debt-equity mix. This can be found out by two methods.

(i) Graphic method-
(ii) Algebraic method

(i) Graphic Method
The relationship between EBIT and EPS is linear. Therefore to construct a chart we need only two points for each alternative. Results can be shown on graph by calculating EPS at two different EBIT levels (choice of these levels is arbitrary) under a certain financing alternative. Following figure shows a graphical presentation of linear relationship between EPS and EBIT under various alternatives. It is called EBIT chart.
In this chart EBIT has been shown on horizontal axis and EPS on vertical axis. EPS is assumed to be zero for knowing the starting points at different level of EBIT. By connecting the intercepts with the appropriate EPS points at different EBIT levels two straight lines can be obtained. The point of intersection is called the EBIT-EPS indifference point /break even point. It identifies the EBIT level at which the EPS will be same regardless of the financing plan. For levels of earning below this point, the ordinary share alternative has a more favourable income effect. For levels of earnings above this point, more heavily levered financing plan will generate a higher EPS.

(ii) Algebraic Method

The algebraic method gives more exact figures. The EBIT break—even level can be calculated algebraically as shown below:

\[
\text{EPS : STOCK PLAN} \quad \frac{(\text{EBIT}-I)(1-t)-P}{S_s} = \text{EPS: DEBT PLAN} \quad \frac{(\text{EBIT}-I)(1-t)-P}{S_b}
\]

Where,

- \(S_s\) and \(S_b\) = the number of common shares outstanding under the stock and debt plans
- \(I\) = interest expense
- \(t\) = the firm's income-tax rate
- \(P\) = preference dividend paid.

One should be extra cautious in interpreting the results of the EPS equivalency point. This indicates only the level of EBIT below ordinary share alternative has a favourable effect on EPS and beyond which the debt or preference share alternative have a better effect on EPS. Debt and
preference share alternatives have no equivalency point because their EPS lines on EBIT chart are parallel.

DETERMINATION OF EPS VOLATILITY

EPS volatility indicates the magnitude of cyclical EPS fluctuations around the expected EPS mean. A number of factors like fluctuations of sales volume, selling price, variable cost, fixed costs and operating leverage affect it. The firms with the most volatile sales patterns have the most volatile EPS. EPS volatility is a function of the afore-mentioned factors acting in combination. However, in financial leverage does not necessarily imply an increase in EPS volatility.

Graph No. 1.2 EPS Volatility (1)
Graph No. 1.3 EPS Volatility (2)

Earnings per share (Rs.)

Year

Mean \[ \text{EPS} \]

Earnings per share (Rs.)

Year
EPS volatility can take various forms as shown in the above figure. The relationship between the rupee size of the amplitude and the mean EPS level is worth noting; is same in figure A and B the amplitude of cyclical fluctuations is higher in figure B as compared to figure A. Volatility of EPS as shown in figure C is just the same as in figure B but the mean EPS is higher than figure B.

Secular trends also have an important effect on EPS volatility as may be seen in figure D. In figure D the company has the same EPS cyclical amplitude in rupees as shown in figure B but the strong secular growth trend tends to minimize the significance of volatility. If EPS has got a secular decline one can understand the magnified adverse effect on EPS volatility.

In short, the companies with the most volatile sales patterns are likely to have the most volatile EPS. Hence, in evaluating the effects of future sales fluctuation on EPS, it is important to realize the implications of the factors causing sales fluctuations.

1.11.2 COST OF CAPITAL AND VALUATION APPROACH

The cost of a source of finance is the minimum return expected by its suppliers. The expected return depends on the degree of risk assumed by investors. A high degree of risk is assumed by shareholders than debt holders. This leads one to conclude that debt is a cheaper source of funds than equity even without considering taxes. Tax deductibility further reduces the cost of debt. Preference share capital is also cheaper than equity but not
as cheap as debt. Thus, using cost of capital as a criterion for financing decisions and ignoring risk, a firm would always like to employ debt since it is the cheapest source of funds.

Two theories are commonly advanced to explain real-world corporate financing behaviour,

(i) Trade off theory,
(ii) Pecking order theory.

(i) Trade Off Theory
While choosing the Debt Equity Ratio, financial managers often look at the trade off between the tax shelter provided by debt and the cost of financial distress. Figure given, below shows nature of trade off. If tax shield advantages of debt are considered then the debt would have a favourable effect on value and would help to reduce the overall cost of capital up to some point but beyond this point cost of capital would start increasing and it is not advantageous to employ debt further.

Graph No. 1.4 Trade Off Theory

According to the trade off theory, profitable firms with stable and tangible assets would have higher Debt-Equity Ratio. On the other side, unprofitable firms, with risky, intangible assets tend to have lower Debt-Equity Ratio.

This theory explains reasonably well some industry differences in financial structures. For example, power companies and refineries, use more debt as their assets are tangible and safe. High-tech growth companies, on the other hand, borrow less because their assets are mostly intangible and somewhat risky.

The trade off theory however, cannot explain why some profitable companies depend so little on debt. For example, colgate Palmolive India Ltd., Hindustan Lever Ltd., two highly profitable companies use little debt. The pay large amounts by way of income tax which they can possibly save by using debt without causing any concern about their solvency.
(ii) Pecking Order Theory
There is an alternative theory which explains why profitable firms use little debt; Myers has called it a pecking order theory because there is no well—defined target Debt — Equity Ratio as there are two types of equity i.e. internal and external. While the internal equity (retained earnings) is at the top of the pecking order, the external equity at the bottom and debt in between the two.

A firm first taps retained earnings, because it comes out of profits without much effort. It does not involve floatation cost and further, the capital market does not view the use of it negatively. When the financial needs of the firm exceed its retained earnings, it seeks debt financing because there is very little scope for debt to be mis-priced and also it prevents dilution of control. Then a firm may go for hybrid securities such as convertible debentures and then equity as a last option. External equity is considered as ‘bad news` in capital market because investors generally believe that a firm issues external equity when it considers its stock overpriced in relation to future prospects. So less profitable firms borrow more because their financing needs exceed retained earnings and debt finance comes before external equity in pecking order.

1.11.3 DEBT CAPACITY APPROACH

Employment of debt entails two kinds of burden: interest payment and principal payment. To assess a firm’s debt capacity following ratios can be computed. Debt capacity is the amount which a firm can service easily even under adverse condition. For this purpose following ratios can be considered.

COVERAGE RATIO
The ability to a firm to use debt, can be judged in terms of coverage ratio,

\[ \text{Coverage Ratio} = \frac{\text{EBIT}}{I} \]

The higher the coverage ratio the greater is the certainty that the firm would be in a position to meet its obligations of interest payments. The coverage ratio can be calculated like the EPS, for various level of EBIT. This would provide a better picture of firm’s most likely EBIT to meet out specific commitments.

The defect of this ratio is it does not consider principle payments and there is no suitable norms for comparison.
CASH FLOW COVERAGE RATIO
This is an improvement of interest coverage ratio which even includes principal payment.

\[
\text{Cash Flow Coverage Ratio} = \frac{\text{EBIT+DEPRECIATION+OTHERNONCASH CHARGES}}{\text{INTERESTONDEBT+LOANREPAYMENTINSTOLMENTS}} \times \left(1 - \text{TAX RATE}\right)
\]

DEBT SERVICE COVERAGE RATIO
Financial institutions which provide the bulk of long—tem1 debt finance judge the debt capacity of a firm as per this ratio. Generally, 2:1 ratio is considered ideal. It indicates the number of times the fixed financial obligations are covered by net cash inflows generated.

\[
\text{Debt Service Coverage Ratio} = \frac{\sum_{i=1}^{n} \text{PAT}_i + \text{DEP}_i + \text{INT}_i}{\sum_{i=1}^{n} \text{INT}_i + \text{LRI}_i}
\]

Where,
- \(\text{PAT}_i\) = profit after tax for year \(i\).
- \(\text{DEP}_i\) = depreciation for year \(i\).
- \(\text{INT}_i\) = interest on long-term loan for year \(i\).
- \(\text{LRI}_i\) = long repayment instalment for year \(i\).
- \(N\) = period of the loan.

INVENTORY RESOURCES
In addition to above ratios to assess debt capacity, firms resorting to more sophisticated analysis try to estimate the likelihood of cash insolvency under recessionary conditions for different levels of debt. Gordon Donaldson has shown some potential sources of liquidity available to the firm to meet possible cash drains dividend into three categories.

(i) Uncommitted Reserves,
(ii) Reduction of planned outlays,
(iii) Liquidation of Assets.

1.11.4 CASH FLOW APPROACH
A firm is considered prudently financed if it is able to service its fixed charges under any reasonable predictable adverse conditions. The amount of fixed charges will be high if a company employs large amount of debt. If a company is not able to generate enough cash to meet its fixed obligations, it may have to face financial insolvency. The companies expecting larger and stable cash in flows in the future can employ a large amount of debt in their capital structure. It is possible for a high growth, profitable company to suffer from cash shortage if its liquidity management is poor. For companies like BHEL, NTPC etc. servicing debt is very burdensome in spite of being profitable.
Debt capacity should be thought in terms of cash flows rather than Debt Ratios. A high Debt Ratio is not bad if the company can service it without any risk, it will increase shareholders wealth. On the other hand a low Debt Ratio can prove to be burdensome for a firm which has cash flow problem.

1.12 PRACTICAL CONSIDERATIONS IN DETERMINING CAPITAL STRUCTURE

Financial manager has to plan the pattern of capitalization of the firm in such a way that owner’s interest is maximized. Accordingly that pattern of finance mix should be chosen which may minimize cost of capital and maximize value of stocks. Some times finance manager is swayed by other consideration and points of view and chooses a pattern that is not best suited to serve the interests of the shareholders. The most important considerations are:

1. Cost, Risk and Returns
Ideal pattern of capital structure is one that tends to minimize cost of financing and maximize earning per share. Debt is cheaper than equity because interest on debt is usually much less than the dividend rate. Interest on debt is deductible for tax purposes where as no deduction is allowed for dividends. Since debt is a commitment for long period, it involves risk. If the expectations and plans on which debt was issued change, debt may prove fatal to the company. Similarly if the company issues large amount of preferred stock, residual owners may be left with no or little income after satisfying fixed dividend obligations in the year of low earnings. As against this, since common stock does not entail fixed charge nor the issuer is under legal obligations, the corporation does not incur risk of insolvency though it may result in decline in EPS of the old stockholders.

2. Control
While designing appropriate capital structure controlling position of residual owners should remain undisturbed. The use of preferred stock and debt offers a means of raising capital without jeopardizing control. Since common stock carries voting rights, issue of new common stock will dilute the control of existing shareholders.

control is not a major criterion in widely-held companies shares of such a company are widely scattered and shareholders are not much interested in control but in dividend and capital gains. Control is a very important criterion in closely held company, so they prefer additional requirement of funds to be satisfied with debt or preferred stock to avoid loss of control. However, debt holders put lot of restrictions on company which curtail the freedom of management to run business. Excessive amount of debt can also cause serious liquidity problem and may ultimately make a company sick.

3. Flexibility/ Manoeuverability
Manoeuverability refers to a firms ability to adapt its capital structure to the needs of changing Conditions. The company should be able to raise funds and freedom debt or Preference shares without any delay and cost, whenever needed flexibility depends on following;
(i) Loan Covenants
Loan covenants are generally included in long—term loan agreements and debenture. It may include restriction to distribute cash dividends, to incur Capital expenditure, to raise additional external finances or to maintain working capital at a particular level. These restrictions curtail flexibility of company and may become burdensome if situation changes. So, minimum restrictive covenants should be included in debt agreement.

(ii) Early Repayability
Flexibility of early repaying enables management to retire debt when it has excess cash inflows and does not have profitable investment opportunities as well as company can replace cheaper source of finance for the expensive one.

(iii) Reserve Capacity
If a company borrows to the limit of its debt capacity, it will not be in a position to borrow additional funds to finance unforeseen demand except at restrictive and unfavourable terms. So, a company should not borrow to the limit of its debt capacity. Although flexibility is most desirable, it is achieved at a cost. For easy loan terms and early repayability higher interest is to be paid. Therefore, the company should compare the benefits and costs of attaining flexibility.

4. Timing Of Issue
To decide the appropriate timing of security issue is very important. It depends on readiness of investors to purchase a security in a given period of time and to demand reasonable return. This depends on monetary and fiscal policy of government as well as market Conditions. Depending on business cycle demand of different securities oscillates. The government follows a cheap money policy to boost the economy during a recession and a dear money policy during inflationary period. In times of boom when there all round business expansion and economic prosperity investors have strong desire to invest, It is easier to sell equity shares, But in periods of depression debt should be used because investors are afraid to risk their money in stocks which are more or less speculative. However, heavily levered firms cannot go for further debt.

5. Agency Cost
There may exist a conflict of interest among shareholders, debt holders and management. These conflicts are handled through monitoring and restrictive covenants which are known as agency cost and which influence capital structure. Debt holders put restrictions on the firm in terms of new debt. They also involve outside experts to evaluate soundness of the firm and monitor firms subsequent actions. Similarly, shareholders many monitoring mechanisms to ensure that management raise and invest funds keeping in mind the principle of shareholder’s wealth maximization.

6. Consultation with Investment Bankers and Lenders
Another useful approach in deciding the capital structure is to seek the opinion of investment analyst and institutional investment bankers. They have
expertise and have access to information regarding securities market. Similarly, opinion of lenders and investors is also important. It is useful to know which security they would prefer to buy.

7. Issue Of Innovative Securities
As per SEBI guidelines issuers have considerable freedom in designing financial structures. There is greater scope for employing innovative securities to the advantage of the firm. The important innovative securities are floating rate bonds dual currency bonds, extendible notes and adjustable rate preferred stock etc.

A security may add to the value of firm if it enhances liquidity, diminishes agency cost lowers burden of tax and has more flexibility.

8. Widening The Range Of Financing Sources
In a dynamically evolving financial environment, traditional sources of financing may diminish in importance, They may not adequate, So firm may resort to newer modes of finance , Commercial paper, factoring, euro issues and securitization. The firms should tap different market sources because it helps the firm in acquiring familiarity with the announces of various markets and instruments and establishes itself as a player in market. This will help the firm in increasing the array of options available to the cope with an uncertain future.

1.13 FACTORS INFLUENCING THE PATTERN OF CAPITAL STRUCTURE

It emanates that the approaches for planning capital structure are antagonistic to each other. Thus, to design suitable pattern of capital structure for the company a satisfactory compromise is to be made between these conflicting factors of cost, risk, control, timing etc. This compromise is to be reached by assigning weights to these factors in terms of characteristics of economy and industry and specific company.

1.13.1 FACTORS DEPENDING ON CHARACTERISTICS OF ECONOMY

Any decision relating to pattern of capital structure must be made in the light of future developments which are likely to take place in the economy because the company has little control over the economic environment. Therefore, the company should make predictions of the economic outlook and adjust the financial plan accordingly.

1. State Of Capital Market
Study of trends of capital market should be undertaken in depth since cost and availability of different types of funds is essentially governed by them. If stock market is going to be plunged in bearish state and interest rates are expected to decline, the management may provide greater weightage to maneuverability factor in order to take advantage of cheaper debt later on and postpone debt for the present. However, if debt will become costlier and will be scarce in its availability owing to bullish trend of the market, income factor
may receive higher weightage and accordingly, the management may wish to introduce additional doses of debt.

2. Tempo Of Business Activity
If the economy is to recover from current depression and the level of business activity is expected to expand, the management should assign greater weightage to maneuverability so that the company may have several alternative sources available to procure additional funds to meet its growth needs and accordingly, equity stock should be given emphasis in financing programs and avoid debt with restrictive covenants.

3. Taxation
The existing taxation provision makes debt more advantageous in relation to stock capital. Under the Income Tax Act, 1961, U.'S 36( 1) (iii) interest on debt is a tax deductible expense where as dividend is subject to tax., With effect from June 1, 1997, distributed profits are subject to an extra 15% tax U/S 115JB, Cost of raising finance through borrowing is deductible in the year of incurrence. The cost of issue of shares is allowed as a deduction in 10 years under sections 35D. Although it is too difficult to forecast future charges in tax rates, it is assumed that tax rates will be adjusted down words. In view of prevailing high corporate tax rate in India the company would wish to raise degree of financial leverage.

4. Policy Of Term Financing Institution
If financial institutions adopt harsh policy of lending and prescribe highly restrictive terms the company should abstain front borrowing from those institutions so as to preserve company's maneuverability. However, if finds can be obtained in desired quantity, on easy terms then more weight should be given to cost factor and should obtain funds from institutions that supplies cheaper funds.

5. Levels Of Interest Rates
If interest rates become excessive company may delay debt financing or it may replace it with cheaper funds.

1.13.2 FACTORS DEPENDING ON CHARACTERISTICS OF INDUSTRY

1. Cyclical Variations
There are industries whose products are subject to wider variations in sales in response to national income. The management should attach more importance to maneuverability and risk for choosing finance mix for such industries whose sales fluctuate very markably over a business cycle so that the company can expand or contract the resources as per its requirements.

2. Degree Of Competition
Public utility concerns are generally free from competition. So profits of these concerns are relatively stable and predictable. These firms can take advantage of financial leverage. But the industry in which there is neck to neck competition and so, profits are not predictable and stable company
should insist on equity share financing because it would incur the risk of not being able to meet payments on borrowed funds in case debt is used.

3. Norms For Term-Financing Institution
The general debt-equity norm prescribed by the Indian financial institutions for providing assistance to medium and large scale project is 5:1. The promoters are required to contribute a minimum of 20% to 25% of the cost of the project. So term finance in this way is available only if promoters are ready to contribute.

1.13.3 FACTORS DEPENDING ON CHARACTERISTICS OF COMPANY

1. Size Of Business
Smaller companies confront tremendous problem in assembling funds because of their poor creditworthiness, investors may find it risky and lenders may prescribe highly restrictive terms. This is why common stock represents major portion of the capital in smaller concerns. However, the control factor also be considered because if the shares are widely available some large concern may purchase controlling interest. So they may opt for debtor sell shares in closed circle to preserve control. Larger concerns have to employ different types of securities to procure desired amount of funds at reasonable cost if demand for funds is restricted to a single source.

2. Form Of Business Organization
Control principle should be given higher weightage in closely held companies so these companies would prefer preference shares or debt which does not involve dilution of control whereas, in case of widely held companies the share holders are not concerned about control but with dividend and capital gain. These companies can take benefit of financial leverage.

3. Stability Of Earnings
With greater stability in earnings and sales a company can undertake the fixed obligation debt with low risk. But a company with irregular earnings will not choose to burden itself with fixed charges and depend upon the sale of shares to raise capital.

4. Asset Structure Of Company
A company which has invested major portion of funds in fixed assets and demand of whose Products is secured should give weightage to leverage and should take advantage of cheaper source. But the companies whose assets are mostly receivables and inventory leverage would be risky.

5. Age Of Company
Younger companies find themselves in difficult situation to raise capital in the initial years because of greater uncertainty and also because they are not to suppliers of funds. So they should keep as many alternatives open as possible in fixture to meet there growth requirements. On the other hand, established companies with good earning records are always in comfortable position to raise capital from whatever sources they like.
6. Credit Standing
A company with high credit standing has greater ability to adjust sources of funds upwards or downwards in response to major changes in needs for funds than the one with poor credit standing. In the former case, the company should pay greater attention to maneuverability factor and in the latter case by improving its liquidity and earnings potential. It should aim at improving credit standing.

7. Attitude Of Management
The management attitude towards control of the enterprise and risk has to be minutely observed. Where the management has strong desire for assured and exclusive control. Preference will have to be given to borrowing of funds. Further, if company insists on risk principle it would be unwilling in issuing debentures or preference shares which might land the company in greater risk but if the company is ready to take some risk it may resort debt and can improve company’s earnings.

1.13.4 FACTORS AFFECTING CAPITAL STRUCTURE OF TWO WHEELER COMPANIES:

1. Tempo of Business Activity
The economy is recovering gradually from depression and the level of business activity is expanding in such a situation equity stock should be given more emphasis and company should avoid issuing bonds with restrictive covenants. Two wheeler companies have relaying more on reserves. So the company has kept its debt option open to meet its growth needs in future.

2. Taxation
Rate Of Return On Investment is quite higher than Rate Of Interest prevailing on borrowed funds. As the interest on debt is tax deductible the company must take advantage of Trading On Equity by using more debt in finance mix to magnify the earnings of share holders. The company is not taking advantage of leverage. In view of prevailing high corporate tax rates in India the company should raise degree of financial leverage from taxation point of view.

3. Degree Of Competition
The main competitors are HERO HONDA MOTORS LTD and BAJAJ AUTO etc. and many new entrants, even foreign companies have come in the market. It is predicted that both the growth rate and profit margin will remain under pressure for all the companies in the future and domination may get diluted over a period of time. In such a situation of severe competition profits of the company are not easy to predict, risk principle should be given more weightage. Probably, this seems the main reason why company relies more on internal funds and not using debt funds since last few years.

4. Internal Factors of the Company
The profit and sales of the company in recent years has shown sharp increase. Despite of threat of severe future competition company can expect good profit and sales even in future because at present it covers 48% of
market share at the same time company enjoys very high credit standing position as per CRISIL standard so, it is easy for company to raise fund through debt but it seems that company does not want creditors interference in management of company. So it does not rely on debt. Simultaneously. Promoters do not want to dilate the control also so they rely more on internal funds than external equity.

1.14 FEATURES OF A SOUND CAPITAL STRUCTURE

1. Return and Risk
The capital structure of the company should be most advantageous, it should generate maximum returns to the shareholders without adding additional Cost to them. The financial manager must evolve the necessity measures to secure intensive and optimum utilization of available financial resources and should ensure proper balance between owned funds and borrowed funds. The use of excessive debt threatens the solvency of the company. To the point debt does not add significant risk it should be used, otherwise it should be avoided.

2. Flexibility
A financial plan must have element of flexibility management must provide for contingencies to meet unforeseen events boldly. It should be possible for company to adapt its capital structure with minimum cost and delay if required by changed situation and whenever needed to provide funds to finance its profitable activities.

3. Liquidity
There must be judicious compromise between profitability and liquidity. Liquidity cannot be sacrificed for the sake of profitability. The cardinal principle of successful financial planning dictates that the funds be obtained as cheaply as possible, but consistent with safety.

4. Capacity
The capital structure should be determined within the debt servicing capacity of the company and this capacity should not be exceeded. The debt capacity depends on its ability to generate future cash flows. It should have enough cash to pay creditor’s fixed charges and principal sum.

5. Control
The sound capital structure should involve minimum risk of loss of control of the company.

6. Simplicity
A good capital structure plan should be simple so that it is easy to manage and should not have unnecessary varieties in the type of securities.

1.15 CAPITALISATION

Capitalisation is an important constituent of financial plan. In common parlance, the phrase ‘Capitalisation’ refers to total amount of capital employed in a business. However, scholars are not unanimous in so far as capitalisation
is concerned. The term capitalisation connotes the process of determining the quantum of funds that a firm would require to run its business.

Guthman and Doughall define capitalisation as the sum of par values of the stock and bonds outstanding. In this definition reserves are not included. Gerstenberg defines capitalisation as the total accounting value of all the capital regularly required in business. So it is a wider definition.

1.15.1 BASES OF CAPITALISATION

The capitalisation of an enterprise depends on its expected average net income. One of the problems facing finance manager is determination of value at which a firm should be capitalised because it will have to raise funds accordingly. There are two important theories that contain guidelines with which the amount of capitalisation can be decided.

(i) Cost theory of capitalisation
(ii) Earning theory of capitalisation

(i) Cost Theory Of Capitalisation
According to this theory, capitalisation of a firm is determined on the basis of cost of different assets. It is the sum of the costs of fixed assets, promotional and organizational expenses and current assets requirements of the firm. The method is quite useful in the case of a new company as it gives a clear picture of the amount of capital required and to be raised.

However it does not provide sufficient basis for capitalisation of a company with irregular earnings. In addition, book value of assets is highly stable in nature and fails to reflect changes. Capital assets may have inflated values or become obsolete. This will not be reflected in the figure of capitalisation determined on cost basis. If some of the firm’s assets lie idle, become obsolete or are poorly managed, earnings will be low and the firm will not be able to pay favourable returns on investments and the result will be over capitalisation.

(ii) Earning Theory Of Capitalisation
The earning theory of capitalisation recognizes the fact that true value of an enterprise depends upon its earning and future earning capacity. So the value of capitalisation of a company is equal to the capitalised value of its estimated earning.

Capitalisation = Annual net earnings x Capitalisation rate

Annual net earnings
The estimation of future earnings in a new concern is not an easy task as no historical data is available for the basis. However, it is not that difficult in existing concern. It can be estimated on the basis of past earning records, leaving abnormal earnings into account. Average of few past years profit may be considered fair. If the earnings show increasing or decreasing trend weighted average method should be considered giving more weight to recent years.
Capitalisation rate
Capitalisation rate is investor’s expected rate of return. It can be decided by studying the rate of earnings of similar companies in the same industry and the rate at which market is capitalising the earnings. Thus capitalisation rate must reflect return on the invested capital that would adequately compensate the investors for the use of his funds and the risk undertaken by him.

Earning theory is generally preferred by established business and for a new business cost theory is more helpful.

1.16 OVER CAPITALISATION

The phrase over capitalisation has been misinterpreted as abundance of capital on the contrary over capitalised firms is found short of funds. A business is said to be over-capitalized:
- If the capitalisation exceeds the real economic value of its net assets.
- If fair return is not realized on capitalisation
- If the business has more net assets than it needs.

This is generally found in companies which have depleted assets such as oil and mining concerns. This condition is commonly known as 'watered stock'.

A company is said to be over-capitalised when the aggregate of the par value of its shares and debentures exceeds the true value of its fixed assets. If the earnings are lower than the expected returns it is over capitalisation. It is noteworthy that a company can be regarded over capitalised when it is not able to earn fair income over along period of time. it the earnings are adversely affected owing to some abnormal situation it is not said to be over-capitalised.

Gerstenberg opines that "a corporation is over-capitalised when its earnings are not large enough to yield a fair return on the amount of stocks and bonds that have been issued". It is possible that company has more funds and low earnings.

To test precisely the state of over-capitalisation in a company comparison of book value of shares with its real value should be made where book value is higher than the real value the company would be over capitalized.

Book Value of shares = \( \frac{\text{Capital + surplus}}{\text{Number of outstanding shares}} \times 100 \)

Real Value of shares = \( \frac{\text{capital value of earnings}}{\text{Number of outstanding shares}} \)
1.16.1 CAUSES OF OVER—CAPITALISATION

1. Promotion Of A Company With Inflated Assets
A company right from its incorporation falls prey to over-capitalisation. if it has been established with assets acquired at higher prices which do not bear any relation to their earning capacity. This situation arises generally when partnership firm or private limited company is transferred to public limited company because in this case assets may be transferred at a price higher than its real value. So book value- would be higher than real value.

2. Over Estimation Of Earnings At The Time Of Promotion
A mistake in initial estimation of earning may land a company in the state of over capitalisation since capitalisation based on such an estimate is not justified by income which the company actually earns.

3. Application Of High Capitalisation Rate
Despite correct estimate of earnings a company may be in a State of over-capitalisation if higher capitalisation rate was applied to determine its total capitalisation.

4. Formation Of Company During Inflationary Period
Generally company started in inflationary conditions turns into over—capitalisation after the inflationary conditions subside. This happens because assets which were acquired at inflated prices do not bear any relation to their earning capacity.

5. Defective Depreciation Policy
Many companies become over-capitalised because they do not make adequate provision for depreciation, replacement or obsolescence of assets. This causes inefficiency in the company which in turn results in its reduced earnings capacity.

6. Liberal dividend policy
Company following too liberal dividend policy continuously for long period of time is deprived of the benefits of retained earnings. Thus, such companies fails to build up sufficient funds to replace worn-out assets and so their operating efficiency suffers and when needed company has to rely on costlier source of financing which in turn will reduce earning capacity and lead to over capitalisation.

7. Shortage of Capital
Sometimes, over capitalisation may be outgrowth of shortage of capital when the firm experiences shortage of funds to meet emergent requirements compelling it to procure necessary funds at exorbitant rate of interest.

8. Fiscal Policy
Due to the negative taxation policy a company’s tax liability increases and also it restricts the benefits of tax deductibility for depreciation. So company is left with small residual income for dividend distribution and retention.
Consequently, operating efficiency of the company suffers and the state of over capitalisation sets in.

9. Promotional Expenses
Over-capitalisation may occur when the company incurs high promotional expenses, during which period promoters were fabulously paid high price for their services where the company does not subsequently justify this.

1.16.2 EFFECTS OF OVER-CAPITALISATION

1. Effect On Corporation
Due to over-capitalisation the company loses investor’s confidence owing to irregularity in dividends caused by reduced earning capacity. The market value of shares falls and it may find difficulty in raising new capital.

Over-capitalised firms may at times fail to make regular payments of interest and repay principal money. So creditors may demand liquidation of the company. To regain the lost confidence, such firms have been found manipulating books of accounts to show inflated profits. Dividend is distributed out of capital which further aggravates the crisis. The company may appear to be in robust condition, even though it may have lost its vigor and vitality and may collapse at any time because of the anemic financial condition.

2. Effect On Shareholders
Shareholders suffer doubly the burnt of over-capitalisation. Because of a fall in the market value of shares, they are not in a position to dispose of their holdings profitably. On the other hand not only their dividend income fall but also it receipts becomes uncertain. They develop the feeling that the corporation is funded on shifting sands.

3. Effect On Consumers
A corporation can not resist the temptation of increasing the prices of its products to inflate profits and there is every possibility that the quality of product would go down.

4. Effect On Society
The over-capitalised concerns suffer multi-pronged attacks from various sections of society. They are not in a position to sustain in competition. They gradually draw closer to a situation ordering liquidation while the existence of such concerns can not justified. their extinction would cause irreparable damage to society. Industrial development languishes and labourers lose employment. Wage rate declines and due to that their purchasing power declines. This tendency may permeate over the whole society and recession may follow.

1.16.3 REMEDIES OF OVER-CAPITALISATION

Effects of over-capitalisation are so grave that the company should take immediate measures to rectify the situation, but it can not be rectified easily,
chiefly because the factors which are responsible for over-capitalisation do not entirely disappear.

1. Reduction in Funded Debt
To cut the knot of over-capitalisation, such firms are suggested to reduce the amount of debt to prune the amount of capital in accordance with their earnings. Redemption of debt needs additional funds which can be procured either from reinvestment of earnings or from sale of additional stock. Due to non-availability of large amount of earnings the only option available is to go to stock market. but they would find it difficult to procure money out of share capital because public response to their issue might not be encouraging.

2. Reduction Of Fixed Charges On Debt
It is also suggested that with a view to improving earning position over—capitalised concerns should slash down the burdens of fixed charges on debt for this, existing bondholders will have to be made to agree to accept new bonds carrying lower interest raw in lieu of their old holdings. The saving in interest—payment would hardly offset Premium the company would be forced to allow the bond holders in order to induce them to accept new bonds and moreover this procedure would not really reduce capitalisation.

3. Redemption Of High Dividend On Preferred Stock
In order to reduce the burden of fixed charges it is suggested that preferred stock carrying high dividend rate should be redeemed. This step will again be not useful especially of ‘cumulative’ preference shares because large amount of funds would be needed to redeem this and that would probably come from sale of common stock at low prices.

4. Reducing Par Value of Shares
An over-capitalised concern should reduce the amount of stock outstanding by reducing par-value of shares. This is nothing but re organisation of share capital which helps the company in obscuring the real state of affairs. This is a good method but is sometimes impossible because of the stockholder’s tenacious belief in the importance of par value.

5. Reduction In Number Of Shares
By reducing the number of outstanding shares, efforts are made to correct over-capitalisation. As a result of this, earning per share tends to go up by the same proportion. This will improve credit position and share value of the company.

1.17 UNDER CAPITALISATION

Under-capitalisation is the reverse of over-capitalisation. Under-capitalisation comes about as a result of:

- Under-estimation of future earnings at the time of promotion. And/ or
- An unforeseeable increase in earnings resulting from later developments
Bonneville and Dewey observe that when a corporation is earning an extraordinary large return on its outstanding stock it is said to be under capitalized.

So, the phrase under-capitalisation should not be misinterpreted as inadequacy of capital. At this stage, the real worth of the assets exceeds their book value and the rate of earnings is higher than companies engaged in similar line of activity. The market value of shares exceeds the book value. It is indicative of effective and proper utilization of funds, sound financial position and good management of the company.

1.17.1 CAUSES OF UNDER CAPITALISATION

1. Under Estimation Of Earnings
If earnings of new venture were under estimated and the firm was capitalised accordingly, it may find itself in the state of under-capitalisation afterwards when its actual turns out to be much more than what was anticipated.

2. Using Low Capitalisation Rate
A company might plunge-in plight of under—capitalisation if it has employed relatively lower capitalisation rate.

3. Deflationary Conditions
A company formed in recessionary condition generally becomes under-capitalised after recession is over. The reason is that during recession assets are brought at exceptionally low prices which bear no relation to their income producing captivity. As the period of recession abates, earning position of the company trends to improve. This will increase real value of assets while the book value of assets would remun as earlier and the consequence would be under capitalisation.

4. Conservative Dividend Policy
A company following conservative dividend policy builds up substantially large funds available for replacement of obsolete assets and for development and expansion purposes. This improves earning position of the company.

5. Maintaining High Standards Of Efficiency
By employing new techniques of production and rationalization of production activities. operating efficiency of a company can be improved.

1.17.2 EFFECTS OF UNDER CAPITALISATION

1. Competition
High earning rates of under-capitalised companies entice many entrepreneurs to setup enterprises in the same line of business. This intensifies the degree of competition which may affect the profit margin.

2. Labour unrest
Employees often feel that the corporation is making enormous profits and they
Have legitimate right to have a share in those profits, and they are not adequately paid this generates a feeling of hostility on the part of the employee and leads to labour unrest.

3. Consumer dissatisfaction
consumers feel that the unusual earning of the company is due to very high selling price and so they may switch over to some other products.

4. Governmental interference
Tax liability of such firm increases with increase in profits. Also the belts of state control and intervention are tightened at the instance of dissatisfied consumers, employees and investors.

5. Easy credit
A company may have to resort frequently to short-term credit and may even seek additional long-term funds without much difficulty.

6. Market price and marketability of shares
Enormous earnings may result in an increase in market price of shares and the company may be tempted to raise new capital. The marketability of such shares tends to be narrow because of very high prices. Share prices register violent fluctuations and speculators take undue advantage of this situation.

1.17.3 REMEDIES OF UNDER CAPITALISATION

1. Stock Split-up
To reduce the effect of under capitalisation the stock should be split up into a large number of shares and reduce the value of each share in accordance with the rate of a split-up. The effect of this split is that the earnings would be spread over a greater number of shares. The shareholders will have no objection because they are not going to lose anything.

2. Capitalisation of surplus of company
If a company has adequate surplus it can be capitalized by issue of bonus shares. Due this share capital will increase along with number of shares but by the same amount surplus will reduce.

Consequently, earning per share will reduce. But owner s income will remain same. This would save management from worker’s threats and consumers will not feel exploited.

1.18 OPTIMUM CAPITAL STRUCTURE

The objective of a firm should be maximization of the value of the firm; the capital structure decision should be examined from the point of its impact on the value of the firm. An optimum capital structure would be obtained at that combination of debt and equity that maximizes the total value of the firm or minimizes the cost of capital.
The value of a firm depends upon its expected stream of earnings and the rate used to discount this stream. The rate used to discount earnings is the firm’s required rate of return or the cost of capital. Thus, the capital structure decision can affect the value of the firm either by changing the expected earnings or the cost of capital or both. Leverage cannot change the total expected earnings of the firm, but it can affect the residue earnings of the shareholders. The effect of leverage on cost of capital is not very clear. Conflicting opinions have been expressed on this issue.

It is often suggested that optimum capital structure is one which can maximize the long run value per ordinary share in the market. The assumptions underlying such an approach are that the Company operates at a marginal rate of return on its capital expenditure, keeping in view the marginal cost of capital. The funds will be spent as long as marginal rate of return is above the marginal cost of the supply of funds. Within this framework of equating the rate of return and the cost of capital, capital structure is sought by using proportion of debt such that the correct degree of trading on equity leading to financial leverage will cause the highest market value of the ordinary shares.

In finance, there is no complete model of an optimum capital structure. The choice of securities is a problem which can not be solved in general terms or by any specific formula. But, at the same time, if the analysis of these consideration: is carried out in an objective manner, the resulting capital structure is likely to be near to optimum capital structure.

1.19 CAPITAL STRUCTURE THEORIES

The existence of optimum capital structure is not accepted by all. There exist two extreme views and a middle position. David Durand identified the two extreme views the net income and the net operating approach. Some believe that financial leverage has a positive effect on firm value up to a point and negative effect thereafter. Still others contend that other things being equal, greater the leverage greater the value of the firm. On this basis here are mainly four approaches.

1. Net Income Approach
2. Net operating income Approach
3. Traditional Approach
4. Modigliani and Miller Approach

1.19.1 NET INCOME APPROACH (NI APPROACH)

As per net income (NI) approach the firm can increase its value or lower its overall cost of capital by increasing the proportion of debt in its capital structure. The assumptions of this approach are

* The use of debt does not change the risk perception of investor; the equity capitalisation rate (ke) and the debt capitalisation rate (kd), remain constant with change in leverage.
* The debt capitalisation rate (kd) is lower than equity capitalisation rate (ke).

* The corporate income taxes do not exist.

Here (ke) and (kd) are constant. Increased use of debt which is cheaper source of finance will result in higher value of firm via higher value of equity. Consequently, overall cost of capital (ko) will decline.

(ko) is measured as under:

\[
ko = \frac{\bar{X}}{V} = \frac{NOI}{V}
\]

where,  
ko = overall cost of capital
\(\bar{X}\) = NOI = expected net operating income  
V = value of the firm

It can also be measured as:

\[
ko = ke - (ke - kd) D/V
\]

Where,  
ke = cost of equity
kd = cost of debt.

The net income approach is shown graphically as under

Graph No. 1.5 The Effect of Leverage on The Cost of Capital under NI Approach.

On x axis the degree of financial leverage and on y axis cost of capital is shown. kd and ke remains constant. As the proportion of debt increased, being less costly, it causes weighted average cost of capital to decline. Under the NI approach the firm will have the maximum value and lowest cost of capital when it is almost debt-financed.
1.19.2 THE NET OPERATING INCOME APPROACH (NOI APPROACH)

According to this approach the market value of the firm is not affected by the capital structure changes. The market value of firm is determined by following equation

\[
V = (D + S) = \frac{\text{NoI}}{k_0} = \frac{X}{k_0}
\]

where \(k_0\) depends on business risk and is independent of finance, mix. So, if \(k_0\) and NOI are independent of finance mix, \(V\) will be a constant and independent of capital structure changes.

As per NOI approach an increase in the use of debt which are apparently cheaper is offset by an increase in the equity capitalisation rate. This happens because equity investors seek higher compensation as they are exposed to greater risk because of higher degree of leverage. So, the total value of firm is unaffected by its capital structure. There is nothing such as an optimum capital structure. Any capital structure is optimum as per NOI approach. The assumptions underlying this approach are:

* The market capitalizes the value of the firm as a whole. The split between debt and equity is not important.

* The overall capitalisation rate \(k_0\) depends on business risk, if business risk is assumed to be constant, \(k_0\) is constant.

* Debt capitalisation rate \(k_d\) remains constant.

* The corporate income taxes do not exist.

Graph No. 1.6 The Effect of Leverage on The Cost of Capital under NOI Approach.

![Graph showing the effect of leverage on cost of capital](image-url)
1.19.3 TRADITIONAL APPROACH

The main assumptions are as under

* The cost of debt $kd$ remains constant up to a certain degree of leverage but rises thereafter at an increasing rate.

* The cost of equity $ke$, also remains constant or rises only gradually up to a certain degree of leverage and rises sharply thereafter.

* Because of behaviour of $ke$ and $kd$ overall cost of capital $ko$ decreases up to a certain point, remains more or less constant or moderate increase in leverage and rises beyond a certain point.

The traditional view is a compromise between NI approach and NOI approach. The crux of this theory is that the cost of capital and value of the firm is dependent on capital structure and there exists an optimum capital structure. The behaviour of cost of capital with regard to capital structure can be explained in three stages:

Stage - 1 : Increasing Value
In the first stage, cost of equity $ke$ remains constant or rises slightly with debt, but when it increases it does not increase fast enough to offset the advantage Of low cost debt, During this stage cost of debt $kd$ remains constant. As a result, the value of the firm $V$, increases or the overall cost of capital $ko$ falls with increasing leverage.

Stage - 2 : Optimum Value
Once the firm has reached a certain degree of leverage, increase in leverage have a negligible effect on the value or the cost of capital of the firm. This is so because the increase in the cost of equity due to the added financial risk offsets the advantages of low cost debt and optimum capital structure occurs.

Stage - 3 : Declining Value
Beyond the acceptable limit of leverage, the value of the firm decreases with leverage or the cost of capital increases with leverage. This happens because investors perceive a high degree of financial risk and demand a higher equity capitalisation rate which offsets the advantages of low-cost debt.
1.19.4 MODIGLIANI AND MILLER APPROACH (M-M APPROACH)

This approach is similar to the net operating income approach. As per M-M approach in the absence of taxes, a firm’s market value and the cost of capital remain unchanged to the capital structure changes. The assumptions underlying this approach are:

* Securities are traded in the perfect capital market situation
* Firms within same industry constitute a homogenous class
* The risk of investors is defined in terms of the variability of the net operating income
* No corporate income taxes exist
* Firms distribute all net earnings to shareholders - 100% pay out.

The M-M hypothesis can be best explained in terms of their propositions I and II.

Proposition-I

For firms in the same risk class, the total market value is independent of financing mix and is given by capitalizing the expected net operating income by the rate appropriate to that risk class. This can be expressed as under:

\[
\text{Value of the firm} = \frac{\text{market value of equity} + \text{market value of debt} + \text{expected net operating income}}{\text{expected overall capitalisation rate}}
\]

Arbitrage Process

As per proposition - I two firms identical in all respects except for their capital structures, can not command different market values or have different cost of
capital. If two identical firms except for the degree of leverage have different market values, arbitrage will take place to enable investors to engage in personal or homemade leverage as against the corporate leverage to restore equilibrium in the market. Thus, the capital structure decision is irrelevant.

Graph No. 1.8 The Cost of Capital under M-M Proposition-I

The cost of capital under M-M proposition - I

Proposition II

Proposition II, defines the cost of equity $k_e = \frac{\overline{X} - kdD}{S}$

Where,
- $k_e$ = cost of equity
- $\overline{X}$ = expected operating income
- $kd$ = cost of debt
- $D$ = market value of debt
- $S$ = market value of ordinary shares

As per this proposition for any firm in a given risk class the cost of equity ($k_e$), is equal to the constant average cost of capital ($k_0$), plus a premium for the financial risk, which is equal to Debt-Equity Ratio times spread between $k_0$ and $kd$. Thus, leverage will result in more earnings per share. The benefit of leverage is exactly taken off by the increased cost of equity so firm’s market value will be unaffected.

After considering the effect of corporate tax M-M also believes that value of Firm increases with increase in debt because of tax deductibility of interest on debt.

1.20 CONCLUSION

The real big change as we see in the automobile industry today, started to take place with the liberalization policies that the government initiated in the 1991. The liberalization policies had a salutary impact on the Indian economy.
and the automobile industry in particular. Like many other nations India’s highly developed transportation system has played a very important role in the development of the country’s economy over the past to this day. One can say that the automobile industry in the country has occupied a solid space in the platform on Indian economy. Empowered by its present growth, today the automobile industry in the country can produce a diverse range of vehicles under three broad categories namely cars, two – wheelers and heavy vehicles.

The present study is based on the capital structure analysis with reference to two wheeler segment of automobile industry in India which clarifies the impact of financial structure on company’s profitability, liquidity and solvency.
REFERENCES

5. Harry G. Guthman and Herbert E. Dougall, Corporate Financial Policy, Prentice Hall Of India Pvt. Ltd. New Delhi, p.138