Outline of the Chapter:-

1. Meaning and definition of capital structure
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3. The optimum capital structure
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6. Limitation of capital structure
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Finance is an important input for any type of business and is needed for working capital and for permanent investment. The total funds employed in a business are obtained from various sources. A part of the funds are brought in by the owners and the rest is borrowed from others-individuals and institutions. While some of the funds are permanently held in business, such as share capital and reserves (owned funds), some others are held for a long period such as long-term borrowings or debentures, and still some other funds are in the nature of short-term borrowings: The entire composition of these funds constitute the overall financial structure of the firm. You are aware that short-term funds keep on shifting quite often. As such the proportion of various sources for short-term funds cannot perhaps be rigidly laid down. The firm has to follow a flexible approach. A more definite policy is often laid down for the composition of long-term funds, known as capital structure. More significant aspects of the policy are the debt equity ratio and the dividend decision. The latter affects the building up of retained earnings which is an important component of long-term owned funds. Since the permanent or long-term funds often occupy a large portion of total funds and involve long-term policy decision, the term financial structure is often used to mean the capital structure of the firm.

There are certain sources of long-term funds which are generally available to the corporate enterprises. The main sources are: share capital (owners' funds) and long-term debt including debentures (creditors' funds). The profits earned from operations are owners' funds-which may be retained in the business or distributed to the owners (shareholders) as dividend. The portion of profits retained in the business is a reinvestment of owners' funds. Hence, it is also a source of long-term funds. All these sources together are the main constituents of the capital of the business, that is, its capital structure.
In this chapter, the researcher will discuss concept of capital structure, components of capital structure and various ratio related with capital structure of selected private life insurance companies, with applying F test.

1. Meaning and Definition of Capital Structure:

Capital can be broadly classified into two parts debt capital and owned capital. Debt capital i.e. borrowed capital consists of debenture, term loan etc, which are company's long term borrowed and owned capital consists of equity share, playing back of profit etc, which are company's long term owned funds. Capital structure refers to the combination or mix of debt and equity, which a company uses to finance its long-term operation. Capital in this context refers to the permanent or long-term financing arrangements of the company.

According to Schall L.D. and Haley C.W., “Capital structure means the proportion of different types of securities issued by a firm. The optimal capital structure is the set of proportion that maximizes the total value of the firm.”

Weston and Brigham define, “Capital structure is the permanent financing of the firm, represented by long-term debt, preferred stock and net-worth.”

Wessel R. H. says, “The term capital structure is frequently used to indicate the long-term sources of funds employed in a business.”

The basic pattern of capital structure can be simple or complex. A simple capital structure consists of equity shares and preference shares. But a complex capital structure consists of multi-securities as equity shares, preference shares, debentures, bond etc.
2. **Determinants of Capital Structure:**

The following are the determinants or factors which determine the capital structure of a business enterprise

2.1 **Cost of Fixed Assets:**

The fixed capital of a business enterprise is invested in fixed assets. The fixed assets are not fixed in value; in fact, their value may record an increase or decrease in course of time. They are fixed in the sense that without them the business cannot be carried on. Further, they remain in business for a longer time. Hence, while making an assessment of the capital requirement the cost of fixed assets also to be kept in mind.

2.2 **Size of the Business Enterprise:**

The capital structure of a business enterprise is also influenced by the size of business enterprise. It may be small, medium or large. A large-sized business enterprise requires much more capital as compared to a small-sized business enterprise.

2.3 **Nature of the Business Organisation:**

The capital structure of a business enterprise is also influenced by nature of business organisation. It may be manufacturing, financing, trading or public utility type.

2.4 **Retaining Control of the Business Enterprise:**

The capital of the business enterprise is also influenced by the intention of the promoters of having effective control. This is also a very important factor in deciding the capital structure. For this purpose they
raise a large amount of money by issuing debentures and preference shares which hardly enjoy any voting rights.

2.5 Legal Requirements:

One has to comply with the provisions of the law in regard to the issue of different types of securities. For example, in India banking companies are not allowed by the Banking Companies Act to issue any type of securities except shares.

2.6 Period of Finance:

Period of finance, i.e., short, medium or long term is also another factor which determines the capital structure of a business enterprise. For example, short-term finances are raised through borrowings as compared to long-term finance which is raised through issue of shares, stocks etc.

2.7 The Purpose of Financing:

The purpose of financing should also be kept in mind in determining the capital structure of a business enterprise. The funds may be required either for betterment expenditure or for some productive purposes. The betterment expenditure, being non-productive, may be incurred out of funds raised by issue of shares or from retained profits. On the contrary, funds for productive purposes may be raised through borrowings.

2.8 Requirements of the Potential Investors:

The capital structure of a business enterprise is also affected by the requirement of the potential investors. Different classes of investors go for different types of securities. Investors who are interested in the stability and safety and regularity of income prefer debentures and preference shares. On the contrary, investors who prefer to take risk so as
to have higher income and also to take part in the management prefer shares or stocks.

2.9 Elasticity of Capital Structure:

The capital structure of a business enterprise should be quite elastic so as to meet the future requirements of the capital also. For this purpose the amount of authorized capital should be fixed at a higher level as compared to present needs.

2.10 Money Market Conditions:

Money market conditions also influence the capital structure of a business enterprise. In case of boom period it is advisable to issue shares which can fetch higher premium due to large profits. On the contrary, during the depression period it is advisable to issue debentures on account of lower rate of interest.

3. The Optimum Capital Structure:

The capital structure differs according to different types of industries. “There is no such thing as the model capital structure for all business undertakings. One way of planning the capital structure is to make it fit into a model complied from a number of different experiences that may have been drawn from the historical ratios of the firm.”⁴ The optimum capital structure is the mix of finance in which the market value of each share is maximum or the average cost of capital is minimum. The value will be maximum or the cost will be minimum when the marginal cost of each source of fund is the same. “An optimum capital structure would be obtained at that combination of debt and equity that maximizes that total value of firm. (Value of shares plus value of debt) or minimizes the weighted average cost of capital.”⁵ Up to a certain point debt added at to
the capital structure will cause the market value of firm to rise and cost of capital to decline. However after the optimum point has reached, any additional debt will cause the market value to decrease and the cost of capital to increase.”

“Optimal capital structure can be properly defined as that combination of debt and equity which attains the stated managerial goals- maximization of the firms market value and minimization of the firm’s cost of capital. As the existence of an optimum capital structure implies the simultaneous optimization of both the cost of capital and firm’s market value, it occupies a central position in the theory of financial management.”

“The normative objectives of the firm of maximizing stockholders wealth are to reduce the cost of capital to a minimum by continue raising long-term funds over time in the least expensive ways.”

The overall cost of capital is minimized, theoretically at least, when the firm reaches its optimum capital structure. The optimum capital structure strikes a balance between the risks and returns and thus maximizes the price of the stock. According to Ezra soloman, “A firm has a certain structure of assets, which offers net operating earnings of a given size and equity and given a certain structure of rates in the capital market, there is some specific degree of financial leverage at which the market value of firm’s securities will be higher than at any other degree of leverage.”

4. Factors Affecting Capital Structure:

Capital structure directly affects the financial soundness of a business enterprise. Hence, all the factors, which affect its capital structure, should be considered at the time of its formation. Following are the factors, which affect the capital structure.
4.1 Market conditions
4.2 Cost of capital
4.3 Firm’s internal condition
4.4 Growth rate
4.5 Stability of sales
4.6 Cash flow ability of a company
4.7 Floatation costs
4.8 Assets structure
4.9 Interest rate level
4.10 Nature of industry and capital requirements
4.11 Control
4.12 Trading on equity
4.13 Flexibility
4.14 Profitability
4.15 Taxes
4.16 Thinking of investors

4.1 Market Conditions:

Marketing conditions prevailing in the share market affect remarkable market price of share. Hence also affect capital structure of a company. Hence conditions in the stock and bonds market have an important bearing on a firm’s optimum capital structure.
4.2 Cost of Capital:

Debt is usually least expensive because there are tax shielded saving on interest whereas the use of common stock is the most expensive, therefore impact of financing decisions on the overall cost of capital should be evaluated and the criteria should be such as to minimize the overall cost of capital or to maximize the value of the firm.

4.3 Firm’s Internal Conditions:

The internal conditions of a company also play an important role in capital structure. Suppose firm has just successfully completed R&D programme and projects higher earnings in the immediate future, however, the new earnings are not yet anticipated by investors and hence are not reflected in the price at stock. This company will now issue stock. It would prefer to finance with debt until the higher are earnings materialize and reflected in the stock price, at which time it might want to sell an issue of common stock, retire the debt and return to its target capital structure.

4.4 Growth Rate:

Faster growing firms must rely more heavily on external capital. Rapidly growing firms tend to use somewhat more debt than companies of slower growth. Use of more debts results into lower taxation and higher dividend on equity share capital.

4.5 Stability of Sales:

Stability, adequacy, volume and predictability of earnings determine the capital structure. The firms with stable sales would have high ratio of funded debt because they will not face difficulty in
meeting their fixed commitment. The companies with declining sales would not employ debt or preference share capital, because they would not like to be burdened with fixed changes.

4.6 Cash Flow ability of a Company:

To determine the debt capacity of a firm, the cash flow of the firm under the very adverse conditions, should be examined. A firm is conservatively financed if it is able to serve its fixed charges under any reasonably predictable adverse conditions. It is not the average cash inflow but the yearly cash inflow which is important to determine the debt capacity of a company. Fixed financial obligations must be met when due, not on an average and not in most years but always.

4.7 Floatation Costs:

Floatation costs are incurred only when the funds are raised. The cost of floating a debt is less than cost of floating an equity issue. This may encourages a company to use debt then issue equity shares.

4.8 Assets Structure:

Firms whose assets are suitable as securities for loans tend to use debt heavily. Borrowed capital should not exceed a reasonable percentage of fixed assets. Generally fixed assets are associated with long-term debts while current assets are associated with short term debts.

4.9 Interest Rate Level:

The interest rate offered to securities affect capital structure. Higher interest rate makes financing costly, where lower interest rate make financing cheaper.
4.10 Nature of Industry and Capital Requirements:

Nature of industry is one of the important factors influencing capital structure. If the company has stable earnings and risk-uncertainty are lower, the company prefers more debentures and preference share. Because it can pay interest and dividend regularly. But if company's earnings are not stable and risk-uncertainty is comparatively higher, the company prefers more equity share. Because there is no need to pay guaranteed return on equity share. Equity share is itself a risky investment.

Similarly if capital requirement is very high, the company should have very high authorized capital, so that it can issue new shares-debt easily in future.

4.11 Control:

If management has voting control over the company and not in a position to buy any more stock, debt may be a choice for new financing. On the other hand, management group is not concerned about voting control, may decided to use equity rather then debt. An excessive amount of debt can also cause bankruptcy, which will mean a complete loss of control.

4.12 Trading on Equity:

To utilize regular borrowed capital and equity capital in a business firm is trading on equity share. If a company utilizes borrowed capital along with preference share capital, the rate of return on equity share can be increased, which is called trading on equity. If interest rate on borrowed capital or dividend rate on preference share is less than general rate of earning of a company, equity share holder can avail benefits of additional dividend. Trading on equity indicates present of
favourable financial leverage of capital structure. Thus with a view to take benefit of trading on equity, a company should make proper combination of equity share, preference share and debt in its capital structure.

4.13 Flexibility:

The company’s desire for flexibility in future financing decisions also affects the capital structure of the company. Therefore the company should compare the benefits and costs of attaining the desired degree of flexibility and balance them properly.

4.14 Profitability:

The firms with very high rates of return on investment use relatively little debt. Their high rates of return enable them to do most of their financing with retained earnings.

4.15 Taxes:

Interest is a deductible expense while dividends are not deductible. Hence the higher a firm’s tax rate, the greater is the advantage in using debt and lower the firm's tax rate, the greater is the advantage in using equity.

4.16 Thinking of Investors:

Investors are two types, those who are interested in stable earnings by taking the least risk and those who are interested in more and more earning by takings maximum risk. Therefore a company should make optimum combination of equity share capital - preference capital-debt in its capital structure, so that it can attract both types of investors-risk seeking investors and safety seeking investors.
5. Importance of capital Structure:

The important of Capital Structure has been discussed under the following heads:

5.1 To get Trading on Equity : To utilize regular borrowed capital and equity capital in a business firm is trading on equity share. If a company utilizes borrowed capital along with preference share capital, the rate of return on equity share can be increased, which is called trading on equity. If interest rate on borrowed capital or dividend rate on preference share is less than general rate of earning of a company, equity share holder can avail benefits of additional dividend.

5.2 Determinant of business Success: Sound financial management is the index of success of an enterprise, its existence and growth. It makes possible the use of available resources in the form of men, materials and machines more effectively. Thus, it helps in preparation of plans for development and expansion and their successful execution.

5.3. Optimal Utilization of Resources: Sound financial management Capital Structure emphasises an optimum utilization of resources of the enterprise. In fact, the failure of a business enterprise is not always the result of inadequate finance but is the result of defective management of funds. Finance management plays an important role for optimal utilization of the resources of the enterprise.

5.4 Basis of Planning, Co-ordination and Control: Capital Structure provides basis for planning, co-ordination and control of various functional areas such as production, marketing etc. Plans and different budgets prepared through financial forecasting are the basis of
planning. The co-ordination between various activities of the business is provided by budgetary control; expected standards are determined for different functions and production activities and compared with actual performance. In case of variations, corrective actions are taken. Thus, financial management controls and co-ordinates all activities of the concern.

5.5 To get Information of Cash Flow ability of a Company: To determine the debt capacity of a firm, the cash flow of the firm under the very adverse conditions, should be examined. A firm is conservatively financed if it is able to serve its fixed charges under any reasonably predictable adverse conditions. It is not the average cash inflow but the yearly cash inflow which is important to determine the debt capacity of a company. Fixed financial obligations must be met when due, not on an average and not in most years but always.

5.6 Measurement of Performance: The performance of the business can be measured by its financial results i.e. its size of earning. Risk and profitability are two major factors which jointly determine the value of firm. Financial decisions which increase the risk will reduce the value of the firm, and on the other hand, financial decisions which increase the profitability will enhance the value of the firm. Therefore, risk and profitability are two essential ingredients of a business.

5.7 To determine Cost of Capital: Debt is usually least expensive because there are tax shielded saving on interest whereas the use of common stock is the most expensive, therefore impact of financing decisions on the overall cost of capital should be evaluated and the criteria should be such as to minimize the overall cost of capital or to maximize the value of the firm.
6. Limitation of Capital Structure

The limitations of capital structure may be summarised as under.

(A) **Interim Reports:** Capital structure of a company is essentially interim reports usually prepared for accounting period. Hence, the financial information as revealed by them is neither complete nor exact. The true information can be known only when the business is closed down.

(B) **Historical Data:** Performance of a business enterprise is appraised on the basis of historical data revealed in financial statements; as they do not reflect price-level changes, so capital structure may be of little value in decision making.

(C) **Quantitative and Monetary Data:** Performance of a business should be appraised keeping in view both quantitative and qualitative information but capital structure depict only those items of quantitative information which are expressed in monetary terms. A number of qualitative factors such as efficiency of workers, reputation and prestige of management, customers’ satisfaction, loyalty and integrity of management and employees are not depicted by the capital structure. Without taking into consideration these factors, the performance of business cannot be appraised correctly.

(D) **Unrealistic Accounting Concepts and Conventions:** capital structure are based on accounting concepts and conventions which make them unrealistic. For example, the value of fixed assets in the balance sheet is shown on the basis of going concern concepts. This means that value put on the asset rarely represents the amount of cash which would be realized on liquidation. Similarly, the income statement which is prepared on the basis of the convention of
conservatism, fails to disclose the true income, for it includes probable losses and ignores probable incomes. Thus, performance appraisal may not give true and fair picture of a business.

(E) **Personal Judgment:** Personal Judgments influence capital structure, which in turn affect the performance. Many items such as inventory valuation, method of depreciation, etc. depend on the personal judgment of the accountant which in turn depends on the skill, integrity and competence of the accountant. So capital structure though financial statements analysis may be affected by the personal judgments of the analyst.

7. **Components of Capital structure of selected Companies:**

The capital structure of the selected companies consists of equity share, reserves and surplus, secured loan, unsecured loan and deferred tax. The researcher has made an attempt to prepare a table indicating various components of capital structure of selected fertilizer companies, which are presented in below respective tables.

The company-wise analysis of component of capital structure of selected companies is as under.

**7.1 SBI Life Insurance Co. Ltd.:**

The table 5.1 and chart 5.1 shows that the main capital structure of SBI life insurance company Ltd. The share capital of the company indicates declining trend during the study period from 2003-04 to 2012-13. It ranged between 2.13 percent to 39.87 percent to total capital structure. It was the highest 39.87 percent in the beginning of the year and the lowest 2.13 percent at the end of the year.
Table 5.1
Chart 5.1
The second main component of capital structure was reserve and surplus. The reserve and surplus was the highest 2.46 percent in the year 2010-11 and the lowest at 0.00 percent in the year 2008-09. Generally it ranged between 0.00 percent to 2.46 percent which shows mixed trend during the study period.

The third main component was borrowings. The borrowings were not required during the study period.

The fourth component of capital structure was policy holders’ fund which includes credit and (debit) fair value change account, policy liabilities, Insurance reserve and provision for linked liabilities which shows increasing trend between the year 2003-04 to 2012-13 which ranged between 59.96 percent to 95.40 percent.

On the basis of the above analysis, it can be concluded that, the main component of capital structure in SBI Life Insurance Co. Ltd. The main component of capital structure was policy holders’ fund. During 2009-10 to 2011-12 it has remained more than 95 percent. The second main component of capital structure was share capital. It was the highest 39.87 percent during the year 2003-04 and the lowest 1.91 percent in the year 2012-13 which show decreasing trend during the study period. The third main component of capital structure was reserve and surplus. During 2011-12 and 2012-13 it has remained more than 2.45 percent. The fourth main component of capital structure was borrowings which was not required during the study period.
7.2 Bajaj Allianz Life Insurance Co. Ltd.:

The table 5.2 and chart 5.2 shows that the main capital structure of Bajaj Allianz life insurance company Ltd. The share capital of the company indicates declining trend during the study period from 2003-04 to 2012-13. It ranged between 70.18 percent to 0.38 percent to total capital structure. It was the highest 70.18 percent in the beginning of the year and the lowest 0.38 percent at the end of the year.

The second main component of capital structure was reserve and surplus. The reserve and surplus was the highest in 11.37 percent in the year 2004-05 and the lowest at 0.001 percent in the year 2003-04. Generally it ranged between 0.001 percent to 11.37 percent which show increasing trend during the study period.

The third main component was borrowings. The borrowings were not required during the study period.

The fourth component of capital structure was policy holders’ fund which includes credit and (debit) fair value change account, policy liabilities, Insurance reserve and provision for linked liabilities which shows rising trend between the year 2003-04 to 2009-10 which ranged between 29.82 percent to 96.29 percent but then it decreased slightly and reached at 90.92 percent at the end of the year.
Table 5.2
Chart 5.2
On the basis of the above analysis, it can be concluded that, the main component of capital structure in Bajaj Allianz Insurance Co. Ltd. The main component of capital structure was policy holders’ fund. During 2007-08 to 2011-12 it has remained more than 90 percent. The second main component of capital structure was share capital. It was the highest 70.18 percent during the year 2003-04 and the lowest 0.38 percent in the year 2011-12 which show declining trend during the study period. The third main component of capital structure was reserve and surplus. During 2004-05 to 2007-08 and 2011-12 to 2012-13 it has remained more than 8.00 percent. The fourth main component of capital structure was borrowings which was not required during the study period.

7.3 Max New York Life Insurance Co. Ltd.:

The table 5.3 and chart 5.3 shows that the main capital structure of Max Newyork life insurance company Ltd. The share capital of the company indicates declining trend during the study period from 2003-04 to 2012-13. It ranged between 11.98 percent to 68.3 percent to total capital structure. It was the highest 68.36 percent in the beginning of the year and the lowest 11.98 percent at the end of the year.

The second main component of capital structure was reserve and surplus. The reserve and surplus was the highest in 1.31 percent in the year 2007-08 and the lowest at 0.001 percent in the year 2003-04. Generally it ranged between 0.01 percent to 1.13 percent which show increasing trend during the study period.

The third main component was borrowings. The borrowings were not required during the study period.
Table 5.3
Chart 5.3
The fourth component of capital structure was policy holders’ fund which includes credit and (debit) fair value change account, policy liabilities, Insurance reserve and provision for linked liabilities which shows increasing trend between the year 2003-04 to 2012-13 which ranged between 31.63 percent to 86.93 percent.

On the basis of the above analysis, it can be concluded that, the main component of capital structure in Max New York Life Insurance Co. Ltd. The main component of capital structure was policy holders’ fund. During 2009-10 to 2012-13 it has remained more than 81 percent. The second main component of capital structure was share capital. It was the highest 80.87 percent during the year 2007-08 and the lowest 9.02 percent in the year 2012-13 which show mixed trend during the study period. The third main component of capital structure was reserve and surplus. During 2007-08, 2009-10 and 2011-12 to 2012-13 it has remained more than 1.09 percent. The fourth main component of capital structure was borrowings which was not required during the study period.

7.4 Reliance Life Insurance Co. Ltd.:

The table 5.4 and chart 5.4 shows that the main capital structure of Reliance life insurance company Ltd. The share capital of the company indicates declining trend during the study period from 2003-04 to 2012-13. It ranged between 6.32 percent to 88.08 percent to total capital structure. It was the highest 88.08 percent in the beginning of the year and the lowest 6.32 percent at the end of the year.
Table 5.4
Chart 5.4
The second main component of capital structure was reserve and surplus. The reserve and surplus was the highest in 0.30 percent in the year 2005-06 and the lowest at -0.01 percent in the year 2003-04. It ranged between -0.01 percent to 0.04 percent which show declining trend during the study period.

The third main component was borrowings. The borrowings was the highest 1.89 percent in the year 2003-04 but then it decreased gradually and reached at 0.0001 percent in 2005-06 but after company did not required borrowing during the 2006-07 to 2012-13.

The fourth component of capital structure was policy holders’ fund which includes credit and (debit) fair value change account, policy liabilities, Insurance reserve and provision for linked liabilities which shows increasing trend between the year 2003-04 to 2012-13 which ranged between 10 percent to 93.62 percent.

On the basis of the above analysis, it can be concluded that, the main component of capital structure in Reliance Life Insurance Co. Ltd. The main component of capital structure was policy holders’ fund. During 2009-10 to 2011-12 it has remained more than 90 percent. The second main component of capital structure was share capital. It was the highest 88.08 percent during the year 2003-04 and the lowest 6.27 percent in the year 2012-13 which declining trend during the study period. The third main component of capital structure was reserve and surplus. During 2012-13 year it was the highest 10.92 percent which shows downward trend during the year 2003-04 to 2011-12. The fourth main component of capital structure was borrowings which was not required during the study period.
7.5 ING Vysya Life Insurance Co. Ltd.:  

The table 5.5 and chart 5.5 shows that the main capital structure of ING Vysya life insurance company Ltd. The share capital of the company indicates declining trend during the study period from 2003-04 to 2012-13. It ranged between 19.65 percent to 97.80 percent to total capital structure. It was the highest 97.80 percent in the beginning of the year and the lowest 19.65 percent at the end of the year.

The second main component of capital structure was reserve and surplus. The reserve and surplus shows mixed trend during the study period. It ranged between 0.002 percent to 0.02 percent. It was the highest 0.02 percent in the year 2010-11 and the lowest at 0.002 percent in the year 2003-04.

The third main component was borrowings. The borrowings shows increasing trend from the year 2003-04 to 2004-05 which ranged between 0.07 to 0.14 but then it declined and reached at 0.0001 percent in the year 2008-09.

The fourth component of capital structure was policy holders’ fund which includes credit and (debit) fair value change account, policy liabilities, Insurance reserve and provision for linked liabilities which shows increasing trend between the year 2003-04 to 2012-13. It was the highest 80.35 percent in the year 2012-13 and the lowest at 2.12 percent in the year 2003-04.
Chart 5.5
On the basis of the above analysis, it can be concluded that, the main component of capital structure in ING Vysya Life Insurance Co. Ltd. The main component of capital structure was share capital. During 2003-04 to 2004-05 it has remained more than 70.00 percent but then it shows declining trend. The second main component of capital structure was policy holders’ fund. It was the highest 81.49 percent during the year 2012-13 and the lowest 2.12 percent in the year 2003-04 which indicating increasing trend during the study period. The third main component of capital structure was reserve and surplus. During 2012-13 year it was the highest 0.027 percent which shows mixed trend during the year 2003-04 to 2012-13. The fourth main component of capital structure was borrowings which was the highest 0.07 percent in the year 2003-04 and lowest 0.02 percent in the year 2005-06.

7.6 ICICI Prudential Life Insurance Co. Ltd.:

The table 5.6 and chart 5.6 shows that the main capital structure of ICICI Prudential life insurance company Ltd. The share capital of the company indicates declining trend during the study period from 2003-04 to 2012-13. It ranged between 2.01 percent to 12.59 percent to total capital structure. It was the highest 12.59 percent in the year 2005-06 and the lowest 2.01 percent at the end of the year 2011-12.

The second main component of capital structure was reserve and surplus. The reserve and surplus was the highest in 9.34 percent in the year 2008-09 and the lowest at 0.0001 percent in the year 2004-05. Generally it ranged between 0.0001 percent to 9.34 percent which shows mixed trend during the study period.

The third main component was borrowings. The borrowings were not required during the study period.
Table 5.6
Chart 5.6
The fourth component of capital structure was policy holders’ fund which includes credit and (debit) fair value change account, policy liabilities, Insurance reserve and provision for linked liabilities which shows mixed trend between the year 2003-04 to 2012-13. It was the highest 99.02 percent in the year 2003-04 and lowest 86.67 percent in the year 2008-09.

On the basis of the above analysis, it can be concluded that, the main component of capital structure in ICICI Prudential Life Insurance Co. Ltd. The main component of capital structure was policy holders’ fund. During 2003-04 to 2004-05 it has remained more than 98 percent. The second main component of capital structure was share capital. It was the highest 12.59 percent during the year 2003-04 and the lowest 1.93 percent in the year 2012-13 which show decreasing trend during the study period. The third main component of capital structure was reserve and surplus. During 2006-07 and 2012-13 it has remained more than 4.50 percent. The fourth main component of capital structure was borrowings which was not required during the study period.

7.7 Birla Sun Life Insurance Co. Ltd.:

The table 5.7 and chart 5.7 shows that the main capital structure of Birla Sun life insurance company Ltd. The share capital of the company indicates declining trend during the study period from 2003-04 to 2012-13. It ranged between 8.95 percent to 34.98 percent to total capital structure. It was the highest 34.98 percent in the beginning of the year and the lowest 8.95 percent at the end of the year.
Table 5.7
Chart 5.7
The second main component of capital structure was reserve and surplus. The reserve and surplus was the highest 2.69 percent in the year 2009-10 and the lowest at 0.00 percent in the year 2003-04 and 2004-05. It ranged between 0.00 percent to 2.69 percent which show increasing trend during the study period.

The third main component was borrowings. The borrowings were not required during the study period.

The fourth component of capital structure was policy holders’ fund which includes credit and (debit) fair value change account, policy liabilities, Insurance reserve and provision for linked liabilities which shows increasing trend between the year 2003-04 to 2012-13 which ranged between 65.02 percent to 88.87 percent.

On the basis of the above analysis, it can be concluded that, the main component of capital structure in Birla Sun Life Insurance Co. Ltd. The main component of capital structure was policy holders’ fund. During 2010-11 to 2012-13 it has remained more than 88.00 percent. The second main component of capital structure was share capital. It was the highest 34.98 percent during the year 2003-04 and the lowest 8.95 percent in the year 2011-12 which show decreasing trend during the study period. The third main component of capital structure was reserve and surplus. During 2009-10 and 2012-13 it has remained more than 2.18 percent. The fourth main component of capital structure was borrowings which was not required during the study period.
7.8 HDFC Standard Life Insurance Co. Ltd.: 

The table 5.8 and chart 5.8 shows that the main capital structure of HDFC Standard life insurance company Ltd. The share capital of the company indicates declining trend during the study period from 2003-04 to 2012-13. It ranged between 5.64 percent to 29.49 percent to total capital structure. It was the highest 29.49 percent in the beginning of the year and the lowest 5.64 percent at the end of the year.

The second main component of capital structure was reserve and surplus. The reserve and surplus indicates mixed trend during the study period. It was the highest 0.73 percent in the year 2010-11 and the lowest at 0.11 percent in the year 2006-07.

The third main component was borrowings. The borrowings show declining trend during the study period. It ranged between 6.24 percent to 29.52 percent between the year 2003-04 to 2012-13.

The fourth component of capital structure was policy holders’ fund which includes credit and (debit) fair value change account, policy liabilities, Insurance reserve and provision for linked liabilities which shows increasing trend between the year 2003-04 to 2012-13 which ranged between 40.99 percent to 87.50 percent.
Table 5.8
Chart 5.8
On the basis of the above analysis, it can be concluded that, the main component of capital structure in HDFC Standard Life Insurance Co. Ltd. The main component of capital structure was policy holders’ fund. During 2010-11 to 2012-13 it has remained more than 88.00 percent. The second main component of capital structure was share capital. It was the highest 34.98 percent during the year 2003-04 and the lowest 8.95 percent in the year 2011-12 which show decreasing trend during the study period. The third main component of capital structure was reserve and surplus. During 2009-10 and 2012-13 it has remained more than 2.18 percent. The fourth main component of capital structure was borrowings which was not required during the study period.

7.9 TATA AIG Life Insurance Co. Ltd.:

The table 5.9 and chart 5.9 shows that the main capital structure of TATA AIG life insurance company Ltd. The share capital of the company indicates declining trend during the study period from 2003-04 to 2012-13. It ranged between 12.60 percent to 52.67 percent to total capital structure. It was the highest 52.67 percent in the beginning of the year and the lowest 12.60 percent at the end of the year.

The second main component of capital structure was reserve and surplus. The reserve and surplus was the highest in 0.78 percent in the year 2003-04 and the lowest at 0.00 percent in the year 2005-06, 2006-07, 2007-08, 2008-09 and 2009-10 but then it was 0.0001 percent at the end of the year.
Table 5.9
The third main component was borrowings. The borrowings were not required during the study period.

The fourth component of capital structure was policy holders’ fund which includes credit and (debit) fair value change account, policy liabilities, Insurance reserve and provision for linked liabilities which shows increasing trend between the year 2003-04 to 2012-13 which ranged between 46.55 percent to 87.40 percent.

On the basis of the above analysis, it can be concluded that, the main component of capital structure in TATA AIG Insurance Co. Ltd. The main component of capital structure was policy holders’ fund. During 2009-10 to 2012-13 it has remained more than 85 percent. The second main component of capital structure was share capital. It was the highest 52.67 percent during the year 2003-04 and the lowest 2.09 percent in the year 2012-13 which show decreasing trend during the study period. The third main component of capital structure was reserve and surplus. During 2003-04 and 2004-05 it has remained more than 0.77 percent but in the year 2005-06 to 2009-10 it was 0.00 percent. The fourth main component of capital structure was borrowings which was not required during the study period.

7.10 MET Life Insurance Co. Ltd.:

The table 5.10 and chart 5.10 shows that the main capital structure of Met life insurance company Ltd. The share capital of the company indicates declining trend during the study period from 2003-04 to 2012-13. It ranged between 19.01 percent to 87.82 percent to total capital structure. It was the highest 87.82 percent in the beginning of the year and the lowest 19.01 percent at the end of the year.
Chart 5.10
The second main component of capital structure was reserve and surplus. The reserve and surplus was the highest in 0.10 percent in the year 2004-05 and the lowest at 0.00 percent in the year 2010-11.

The third main component was borrowings. The borrowings were the highest 1.52 percent in the year 2004-05 and the lowest at 0.08 percent in the year 2011-12.

The fourth component of capital structure was policy holders’ fund which includes credit and (debit) fair value change account, policy liabilities, Insurance reserve and provision for linked liabilities which shows increasing trend between the year 2003-04 to 2012-13 which ranged between 10.89 percent to 80.92 percent.

On the basis of the above analysis, it can be concluded that, the main component of capital structure in Met Life Insurance Co. Ltd. The main component of capital structure was share capital. During 2003-04 to 2005-06 it has remained more than 50.00 percent but then it shows declining trend. The second main component of capital structure was policy holders’ fund. It was the highest 81.12 percent during the year 2012-13 and the lowest 10.89 percent in the year 2003-04 which indicating increasing trend during the study period. The third main component of capital structure was borrowings which was the highest 0.07 percent in the year 2004-05 and lowest 0.08 percent in the year 2011-12. The third main component of capital structure was reserve and surplus. During 2012-13 year it was the highest 0.027 percent which shows mixed trend during the year 2003-04 to 2012-13.
8. Ratio Analysis:

Ratio analysis is the process of determining and presenting the relationship of items or group of items in the financial statements. In ratio analysis, a definite conclusion is drawn by establishing quantitative relationship between two or more items of financial statements. External parties such as investors, shareholders, creditors etc. require information about the financial soundness or weakness of the concern. Therefore, ratio analysis is used by all these parities including management to evaluate the performance of the concern. With the help of these ratios, the liquidity position, long-term solvency, operating efficiency or profitability and efficiency of a concern can be evaluated.

The ratios used in financial statements analysis may be classified as:-

(A) Liquidity Ratios
(B) Activity or Efficiency Ratios
(C) Profitability Ratios
(D) Capital Structure and Leverage Ratios
(E) Investment Analysis Ratios

Present research work is on “title”. Therefore the researcher has discussed only capital structure related ratio.

(D) Capital structure and Leverage Ratios: These ratios measure the financial contribution of the owners as compared to that of creditors and also the risk in debt financing. The long-term solvency of the business can be examined by using leverage ratios. Following are such important ratios:
Debt-Equity Ratio

Proprietary Ratio

Solvency Ratio

Fixed Assets Ratio

Capital Gearing Ratio

Debt-Service Ratio

Interest coverage Ratio

Debt Ratio

Debt-Equity Ratio: This ratio indicates the relative proportion of debt and equity in financing the assets of a firm. In other words, this ratio reveals the relationship between internal and external sources of funds of a firm. Therefore, it is also called ‘external-Internal Equity ratio’. Expressed as a formula, this ratio is:

\[
\text{Debt-Equity Ratio} = \frac{\text{External Equities}}{\text{Internal Equities}}
\]

OR

\[
\text{Debt-Equity Ratio} = \frac{\text{Total Debts}}{\text{Shareholder’s Funds or Net Worth}}.
\]

Proprietary Ratio: This ratio establishes relationship between proprietors’ or shareholders’ funds and total assets of the business. Expressed as a formula, This ratio is:

\[
\text{Proprietary Ratio} = \frac{\text{Proprietary Funds}}{\text{Total Assets}}
\]
❖ **Solvency Ratio:** This ratio measures the long-term solvency of the business. It reveals between relationship total assets and total external liabilities. External liabilities mean all long-term and Short-term liabilities. It is the difference of 100 and proprietary ratio. It is calculated as follows:

\[
\text{Solvency Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}
\]

❖ **Fixed Assets Ratio:** This ratio expresses the relationship between long-term funds or capital employed and fixed assets of the firm. The ratio is calculated by using the following formula:

\[
\text{Fixed Assets Ratio} = \frac{\text{Long-term Funds}}{\text{Fixed Assets}}
\]

\[
\text{OR}
\]

\[
\text{Fixed Assets Ratio} = \frac{\text{Capital Employed}}{\text{Fixed Assets}}
\]

❖ **Capital Gearing Ratio:** This ratio establishes the relationship between variable cost bearing and fixed cost bearing capital in the capital structure of a company. The ratio is calculated by using the following formula:

\[
\text{Capital Gearing Ratio} = \frac{\text{Variable Cost bearing Capital}}{\text{Fixed Cost bearing Capital}}
\]

\[
\text{OR}
\]

\[
\text{Capital Gearing Ratio} = \frac{\text{Net Worth – Pref. Shares}}{\text{Deb. + Pref. Shares}}
\]
**Debt-Service Ratio:** This ratio is determined by dividing the operating profit or net profit before interest and tax by fixed interest charges. It is also called ‘Interest Coverage ratio’. The ratio is calculated by using the following formula:

\[
\text{Debt-Service Ratio} = \frac{\text{Net Profit (before interest and tax)}}{\text{Fixed Interest Charges}}
\]

### 9. Ratio Analysis of Capital Structure:

Ratio analysis is very powerful analytical tool useful for measuring performance of an organization. It is an attempt to present the information of the financial statements in simplified, systematized and summarized form by establishing the quantitative relationship of the items or group of items of financial statements. The ratio analysis helps the management to analyze the past performance of the firm and to make further projections. The important ratio pertaining to capital structure has be studied under the following heads:

9.1 Debt-Equity Ratio

9.2 Proprietary Ratio

9.3 Solvency Ratio

9.4 Interest Coverage Ratio

**9.1 Debt-Equity Ratio:**

This ratio indicates the relative proportion of debt and equity in financing the assets of a firm. In other words, this ratio reveals, the relationship between internal and external sources of funds of a firm.
Therefore, it is also called ‘External-Internal Equity ratio’. The formula for calculating debt-equity ratio is as below.

\[
\text{Debt-Equity Ratio} = \frac{\text{External Equities}}{\text{Internal Equities}} \quad \text{OR} \quad \frac{\text{Total Debts}}{\text{Shareholder’s Funds or Net Worth}}
\]

This ratio indicates the cushion of ownership funds available to debt holders. It gives an idea of the amount of capital supplied to a firm by internal funds or owners. An averages debt to equity ratio 1:1 is acceptable. The controller of capital issues prescribed that debt-equity ratio of a firm should not exceed 2:1 (i.e., maximum percentage of debt in the capital allowed is 66.66)

The outsider’s funds include all debts, long-term loans, and debentures. The claims of owners consist of preference shares, equity shares, capital reserves, retained earning and reserve representing earmarked surplus, as reserves for contingencies, reserve for plant expansion, etc.

Table 5.11 shows the debt-equity ratio of the selected private sector life insurance companies during the study period.
Table 5.11
Chart 5.11
Table 5.11 shows that the debt-equity ratio of selected private sector life insurance companies. The ratio of SBI Life Insurance Co. Ltd. was higher than norm 1:1 except the year 2009-10 and 2010-11, so it was worried/varied. The debt-equity ratio was not more than the norm 1:1 during 2009-10 to 2010-11. i.e. to say a satisfactory ratio. Thus it was showing rising trend except the year 2009-10 to 2010-11.

In Bajaj Allianz Life Insurance Co. Ltd., the debt-equity ratio was not more than the norm 1:1 during 2004-05 to 2012-13. But the ratio was more than norm 1:1 i.e. to say not satisfactory ratio. The debt-equity ratio was not more than the norm 1:1 in 2003-04 i.e. to say a satisfactory ratio.

The ratio of Max New York Life Insurance Co. Ltd. registered a fluctuating trend during the study period. The debt-equity ratio was not more than the norm 1:1 during the year 2003-04, 2004-05, 2009-10 and 2010-11. It ranged between 0.76:1 to 0.17:1 which shows satisfactory result.

The ratio of Reliance Life Insurance Co. Ltd. shows increasing trend except the year. The debt-equity ratio was not more than the norm 1:1 during the year 2003-04, 2004-05, 2009-10 and 2010-11. It ranged between 0.76:1 to 0.17:1 which shows satisfactory result.

In ING Vysya Life Insurance Co. Ltd., the debt-equity ratio was not more than the norm 1:1 during the year 2003-04 to 2004-05 and 2009-10 to 2010-11. i.e. to say a satisfactory ratio. The debt-equity ratio was more than the norm 1:1 during the remaining year. i.e. to say not satisfactory ratio.

The ratio of Birla Sun Life Insurance Co. Ltd. shows upward trend during the year 2003-04 to 2006-07 it ranged between 1.86:1 to 5.60:1
but thereafter it shows declined trend during the year 2007-08 to 2010-11. The debt-equity ratio was not more than the norm 1:1 during the year 2009-10 to 2010-11 which shows satisfactory result.

The debt-equity ratio of ICICI Prudential Life Insurance Co. Ltd. shows upward trend during the year 2003-04 to 2007-08 it ranged between 2.14:1 to 7.16:1 but thereafter it shows declined trend during the year 2008-09 to 2010-11. The debt-equity ratio was more than the norm 1:1 except during the year 2009-10 and 2010-11 which shows not satisfactory result.

In HDFC Standard Life Insurance Co. Ltd., the debt-equity ratio was more than the norm 1:1 during 2003-04 to 2008-09 and 2011-12 to 2012-13. It ranged between 1.39:1 to 17.34:1 i.e. to say not satisfactory ratio. The debt-equity ratio was not more than the norm 1:1 in 2009-10 and 2010-11 i.e. to say a satisfactory ratio.

The ratio of TATA AIA Life Insurance Co. Ltd. registered a fluctuating trend during the study period. The debt-equity ratio was not more than the norm 1:1 during the year 2003-04, 2006-07, 2008-09 and 2009-10. It ranged between 0.16:1 to 0.87:1 which shows satisfactory result.

The ratio of Met Life Insurance Co. Ltd. indicating a mixed trend during the study period. The debt-equity ratio was not more than the norm 1:1 during the year 2007-08 to 2008-09, 2011-12 and 2012-13. It ranged between 0.14:1 to 0.95:1 which shows satisfactory result.

On the basis of above discussion it can be conclude that the debt-equity ratio of Met Life Insurance Co. Ltd. was the best during the study period followed by TATA AIA, Max Newyork, Reliance, ING Vysya,
Birla Sun Life, HDFC Standard, SBI, ICICI Prudential and Bajaj Allianz respectively.

⇒ ‘F’ TEST

$H_0$ is that the variance arose in the proportion of debt-equity ratio over the years and among the various companies do not differ significantly.

$H_1$ is that the variances arose in the proportion of debt-equity ratio over the year and among the various companies differ significantly.

The table 5.11.1 represents the ‘F’ test in insurance companies under study.

**Table :5.11.1**

‘F’ test for Debt-Equity Ratio (From 2003-04 to 2012-13)

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>Sum of Squares</th>
<th>d.f.(V)</th>
<th>Mean Square</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between companies</td>
<td>1101.06</td>
<td>3.00</td>
<td>367.02</td>
<td>3.63</td>
</tr>
<tr>
<td>Between Years</td>
<td>2162.61</td>
<td>5.00</td>
<td>432.52</td>
<td>4.28</td>
</tr>
<tr>
<td>Residual</td>
<td>1516.35</td>
<td>15.00</td>
<td>101.09</td>
<td></td>
</tr>
<tr>
<td>Total S.S</td>
<td>3678.96</td>
<td>23.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Between companies, table Value of F-test = 2.76 at 5% level.

Between years, table Value of F-test = 2.76 at 5% level.

1) The calculation value (3.63) of F-test between companies is more than table value of (2.76), So $H_1$ is accepted.

2) The calculation value (4.28) of F-test between years is more than table value of (2.76), So $H_1$ is accepted.
9.2 Proprietary ratio

This ratio establishes relationship between proprietors’ or shareholders’ funds and total assets of the business. Expressed as a formula, this ratio is:

$$\text{Proprietary Ratio} = \frac{\text{Proprietary Funds}}{\text{Total Assets}}$$

Table 5.12 shows that the proprietary ratio of selected private sector life insurance companies. The ratio of SBI Life Insurance Co. Ltd. presented mixed trend during the study period. It was the highest 26.12:1 which would indicates the best position of company to total assets to shareholders fund and lowest 0.62:1 in 2011-12 which would not indicates healthy position of the company.

The proprietary ratio of Bajaj Allianz Life Insurance Co. Ltd. narrates fluctuated trend during the study period 2003-04 to 2012-13. It was the highest 2.96:1 in 2011-12 which indicates good position of the company and lowest 1.22:1 in 2005-06 which does not show healthy position. Generally, the proprietary ratio of the company was more than 1.22:1 during the year 2003-04 to 2012-13.

The ratio of Max New York Life Insurance Co. Ltd. registered a declining trend during the 2003-04 to 2008-09 thereafter it increased sharply in the year 2009-10 and 2010-11 again it decreased during the year 2011-12 to 2012-13. It was the highest 15.03:1 in 2010-11 which indicates healthy position of the company and lowest 2.25:1 in 2008-09 which does not show good position.
Table 5.12
Chart 5.12
The ratio of Reliance Life Insurance Co. Ltd. shows mixed trend during the study period. It was the highest 20.39:1 in 2009-10 which would indicates the best position of company to total assets to shareholders fund and lowest 2.20:1 in 2003-04 which would not indicates healthy position of the company.

In ING Vysya Life Insurance Co. Ltd., the proprietary ratio indicates mixed trend during the year 2003-04 to 2012-13. It was more than 18:1 during the year 2009-10 to 2010-11 which indicates the best position of the company and lowest 1.37:1 in 2004-05.

The ratio of Birla Sun Life Insurance Co. Ltd. shows upward trend during the year 2003-04 to 2005-06 it ranged between 2.94:1 to 3.49:1 but thereafter it shows mixed trend during the year 2006-07 to 2012-13. It was the highest 24.19:1 in 2010-11 which would indicates the best position.

The proprietary ratio of ICICI Prudential Life Insurance Co. Ltd. remained between 2.24:1 to 2.88:1 during the year 2004-05 to 2007-08. It was the best in the year 2010-11.

In HDFC Standard Life Insurance Co. Ltd., the proprietary ratio was the highest 21.73:1 in 2009-10 which indicates good position of the company and the lowest in 2012-13 not showing healthy position.

The ratio of TATA AIA Life Insurance Co. Ltd. registered a mixed trend during the year 2003-04 to 2012-13. The proprietary ratio was the highest 27.55:1 in 2010-11 which indicates good position of the company.

The ratio of Met Life Insurance Co. Ltd. indicating also mixed trend during the study period. the proprietary ratio was the highest 25.20:1 in
2010-11 which indicates good position of the company and the lowest 3.91:1 in 2004-05 not showing healthy position of the company.

On like basis of above analysis, it can be conclude that the proprietary ratio of ICICI Prudential Life Insurance Co. Ltd. was the highest among all the companies during the study period followed by TATA AIA, SBI, Met, Birla Sun Life, HDFC Standard, Reliance, ING Vysya, Max Newyork and Bajaj Allianz respectively.

☞ ‘F’ TEST

$H_0$ is that the variance arose in the proportion of Proprietors’ ratio over the years and among the various companies do not differ significantly.

$H_1$ is that the variances arose in the proportion of Proprietors’ ratio over the year and among the various companies differ significantly.

The table 5.12.1 represents the ‘F’ test in insurance companies under study.

**Table 5.12.1**

‘F’ test for Proprietors’ Ratio (From 2003-04 to 2012-13)

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>Sum of Squares</th>
<th>d.f.(V)</th>
<th>Mean Square</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between companies</td>
<td>380.59</td>
<td>3.00</td>
<td>126.86</td>
<td>0.34</td>
</tr>
<tr>
<td>Between Years</td>
<td>11508.72</td>
<td>5.00</td>
<td>2301.74</td>
<td>6.10</td>
</tr>
<tr>
<td>Residual</td>
<td>5657.00</td>
<td>15.00</td>
<td>377.13</td>
<td></td>
</tr>
<tr>
<td>Total S.S</td>
<td>17165.72</td>
<td>23.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Between companies, table Value of F-test = 2.76 at 5% level.
Between years, table Value of F-test = 2.76 at 5% level.

1) The calculation value (0.34) of F-test between companies is lower than table value of (2.76), So $H_0$ is accepted.
2) The calculation value (6.10) of F-test between years is more than table value of (2.76), So $H_1$ is accepted.

9.3 Solvency Ratio:

This ratio also called a debt ratio. The debt ratio is defined as total debt divided by total assets. It indicates the percentage of assets which are financed through debt. It is calculated as under:

\[
\text{Solvency Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}
\]

This ratio should be 1:2 or 0.5:1. A ratio above 1:2 or 05:1 implies that lenders and creditors are providing more finance than ordinary shareholders and that too without expectation of a share in any surplus as compensation for this risk bearing. A low ratio represents security to creditors in extending credit. A very low ratio can cause worry to shareholders as it means company is not using debt to best advantage.
Table 5.13
Chart 5.13
Table 5.13 shows that the solvency ratio of selected private sector life insurance companies. The ratio of SBI Life Insurance Co. Ltd. denotes increasing trend during the year 2003-04 to 2007-08. It was the highest 27.38:1 in 2008-09 which implies that lenders and creditors are providing more finance than ordinary shareholders and that too without expectation of a share in any surplus as compensation for this risk bearing and the lowest 1.01:1 which represents security to creditors in extending credit.

The solvency ratio of Bajaj Allianz Life Insurance Co. Ltd. narrates rising trend during the study period 2003-04 to 2009-10 and then it shows declining trend. It was the lowest 1.07:1 which represents security to creditors in extending credit.

The ratio of Max New York Life Insurance Co. Ltd. registered a mixed trend during the 2003-04 to 2012-13. It was the highest 44.34:1 in 2009-10 which implies that lenders and creditors are providing more finance than ordinary shareholders and that too without expectation of a share in any surplus as compensation for this risk bearing and the lowest 1.07:1 in 2008-09 which represents security to creditors in extending credit.

It can be seen in Reliance Life Insurance Co. Ltd. shows increasing trend during the study period which ranged between 0.80:1 to 34.95:1. The ratio was the highest 34.95:1 in 2011-12.

In ING Vysya Life Insurance Co. Ltd., the proprietary ratio indicates mixed trend during the year 2003-04 to 2012-13. It was the highest 19.92:1 in 2011-12 and the lowest 0.50 at the beginning of the year.

The ratio of Birla Sun Life Insurance Co. Ltd. shows fluctuation trend during the year 2003-04 to 2012-13. The ratio was the highest 24.19:1 in 2010-11 which would not indicates the healthy position of the company.
The solvency ratio of ICICI Prudential Life Insurance Co. Ltd. narrates rising trend during the year 2003-04 to 2009-10 ranged between 9.54:1 to 29.66:1. It was the lowest 5053:1 in the year 2010-11.

In HDFC Standard Life Insurance Co. Ltd., the solvency ratio was the highest 19.72:1 in 2011-12 which indicates not good position of the company and the lowest 2.30:1 in 2009-10 not too much showing healthy position of the company.

The ratio of TATA AIA Life Insurance Co. Ltd. registered a fluctuation trend during the year 2003-04 to 2012-13. The solvency ratio was the lowest 2.23:1 in 2003-04 which represents security to creditors in extending credit.

The ratio of Met Life Insurance Co. Ltd. indicating mixed trend during the study period. The solvency ratio was the highest 21.10:1 in 2012-13 which implies that lenders and creditors are providing more finance than ordinary shareholders and that too without expectation of a share in any surplus as compensation for this risk bearing.

To conclude the above analysis, it can be seen that the solvency ratio of Met Life Insurance Co. Ltd. was the lowest among all the companies during the study period 2003-04 to 2012-13 followed by ING Vysya, SBI, Bajaj Allianz, Max Newyork, Reliance, TATA AIA, HDFC Standard, Birla Sun Life and ICICI Prudential respectively.

更多信息：

**‘F’ TEST**

\( H_0 \) is that the variance arose in the proportion of Solvency ratio over the years and among the various companies does not differ significantly.
**H**$_1$ is that the variances arose in the proportion of Solvency ratio over the year and among the various companies differ significantly.

The table 5.13.1 represents the ‘F’ test in insurance companies under study.

**Table 5.13.1**

‘F’ test for solvency ratio (From 2003-04 to 2012-13)

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>Sum of Squares</th>
<th>d.f.(V)</th>
<th>Mean Square</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between companies</td>
<td>3917.52</td>
<td>3.00</td>
<td>1305.84</td>
<td>2.70</td>
</tr>
<tr>
<td>Between Years</td>
<td>16215.38</td>
<td>5.00</td>
<td>3243.08</td>
<td>6.72</td>
</tr>
<tr>
<td>Residual</td>
<td>7243.70</td>
<td>15.00</td>
<td>482.91</td>
<td></td>
</tr>
<tr>
<td>Total S.S</td>
<td>23459.08</td>
<td>23.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Between companies, table Value of F-test = 2.76 at 5% level.

Between years, table Value of F-test = 2.76 at 5% level.

1) The calculation value (2.70) of F-test between companies is lower than table value of (2.76), So H$_0$ is accepted.

2) The calculation value (6.72) of F-test between companies is more than table value of (2.76), So H$_1$ is accepted.

**9.4 Interest coverage Ratio:**

The interest coverage ratio is used to determine how easily a company can pay interest expenses on outstanding debt. The ratio is calculated by dividing a company's earnings before interest and taxes (EBIT) by the company's interest expenses for the same period. The lower the ratio, the more the company is burdened by debt expense. When a
company's interest coverage ratio is only 1.5 or lower, its ability to meet interest expenses may be questionable.

\[
\text{Interest Coverage Ratio} = \frac{\text{Earnings Before Interest and Taxes (EBIT)}}{\text{Interest Expense}}
\]

Table 5.14 shows that the interest coverage ratio of selected private sector life insurance companies. The ratio of SBI Life Insurance Co. Ltd. presented increasing trend during the study period. It was the highest 6.77:1 in 2010-11 which would indicate its ability to meet expenses and the lowest -2.02:1 in 2003-04 which shows more burden of debt expenses on the company.

The interest coverage ratio of Bajaj Allianz Life Insurance Co. Ltd. narrates mixed trend during the study period 2003-04 to 2012-13. It was the highest 6.15:1 in 2010-11 which indicates good position of the company to meet the expenses and lowest -8.67:1 in 2005-06 which shows weak position of the company to meet the interest expenses.

The ratio of Max New York Life Insurance Co. Ltd. registered a fluctuation trend during the year 2003-04 to 2012-13. It was the highest 3.70:1 in 2011-12 which indicates healthy position of the company and lowest -8.67:1 in 2005-06 which does not show healthy position.

The ratio of Reliance Life Insurance Co. Ltd. shows declining trend during the year 2003-04 to 2007-08 but then it shows increasing trend. It was the highest 11.33:1 in 2011-12 which would indicates the best position of company. In ING Vysya Life Insurance Co. Ltd., the Interest Coverage ratio indicates mixed trend during the year 2003-04 to 2012-13. It was the highest 8.60:1 during the year 2012-13 which indicates the best position of the company and lowest -18.64:1 in 2004-05.
Chart 5.14
The ratio of Birla Sun Life Insurance Co. Ltd. indicates fluctuation trend during the study period 2003-04 to 2012-13. It was the highest 8.33:1 in 2010-11 which would indicates the best position to meet the expenses.

The interest coverage ratio of ICICI Prudential Life Insurance Co. Ltd. It was the highest 11.55:1 in 2009-10 which would indicate its ability to meet expenses and the lowest -25.90:1 in 2006-07 which shows more burden of debt expenses on the company.

In HDFC Standard Life Insurance Co. Ltd., the interest coverage ratio was the highest 6.84:1 in 2011-12 which indicates good position of the company and the lowest in 2008-09 not showing healthy position.

The ratio of TATA AIA Life Insurance Co. Ltd. registered a increasing trend during the year 2003-04 to 2012-13. The interest coverage ratio was the highest 6.26:1 in 2012-13 which indicates good position of the company to meet the expenses.

The ratio of Met Life Insurance Co. Ltd. indicating downward trend during the year 2003-04 to 2006-07. The interest coverage ratio was the highest 1.50:1 in 2009-10 which indicates good position of the company.

On like basis of above analysis, it can be conclude that the interest coverage ratio of ICICI Prudential Life Insurance Co. Ltd. was the highest among all the companies during the study period followed by Reliance, ING Vysya, Birla Sun Life, HDFC Standard, SBI, TATA AIA, Bajaj Allianz, Max Newyork and Met respectively.
‘F’ TEST

H₀ is that the variance arose in the proportion of interest coverage ratio over the years and among the various companies do not differ significantly.

H₁ is that the variances arose in the proportion of interest coverage ratio over the year and among the various companies differ significantly.

The table 5.14.1 represents the ‘F’ test in insurance companies under study.

Table 5.14.1

‘F’ test for interest coverage ratio (From 2003-04 to 2012-13)

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>Sum of Squares</th>
<th>d.f.(V)</th>
<th>Mean Square</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between companies</td>
<td>23.01</td>
<td>3.00</td>
<td>7.67</td>
<td>0.01</td>
</tr>
<tr>
<td>Between Years</td>
<td>11259.97</td>
<td>5.00</td>
<td>2251.99</td>
<td>2.67</td>
</tr>
<tr>
<td>Residual</td>
<td>12657.16</td>
<td>15.00</td>
<td>843.81</td>
<td></td>
</tr>
<tr>
<td>Total S.S</td>
<td>23917.12</td>
<td>23.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Between companies, table Value of F-test = 2.76 at 5% level.

Between years, table Value of F-test = 2.76 at 5% level.

1) The calculation value (0.01) of F-test between companies is lower than table value of (2.76), So H₀ is accepted.

2) The calculation value (2.67) of F-test between companies is lower than table value of (2.76), So H₀ is accepted.
10. Conclusion:

The sources available for private sector life insurance companies to meet their financial needs are plenty. Over all analysis of capital structure and related ratio of selected private sector life insurance companies indicate that share capital were main components of capital structure of ING Vysya, Reliance and Met during the study period. Reserve and surplus were main components of capital structure of Bajaj Allianz, ICICI Prudential and Birla Sun life during 2009-10 to 2012-13. Loans –secured and unsecured/Borrowings were main component of capital structure of HDFC during 2003-04 to 2006-07. The policy holders’ were main component of capital structure of ICICI Prudential during 2003-04 to 2012-13, TATA AIA and Bajaj Allianz during 2009-10 to 2012-13.

The debt-equity ratio was lower than the norm 1:1 in Met, during 2003-04 to 2006-07 and 2009-10 to 2010-11. In case of Bajaj Allianz, it was more than norm 1:1 during 2004-05 to 2012-13. So it can be said that Met has the lowest debt-equity ratio and Bajaj has the highest debt-equity ratio during 2003-04 to 2012-13.

Application of F test for analyzing debt to equity ratio is significant between the companies and over the years, so $H_0$ is rejected and $H_1$ is accepted.

The net worth to total assets ratio was higher than the norm 0.2:1 in all selected companies during 2003-04 to 2012-13, indicating sound financial position. But it was less than norm 0.2:1 in SBI Life during only 2011-12. So, all the selected private sector life insurance companies have shown good financial performance with special reference to net worth to total assets ratio except SBI during only
2011-12. ICICI Prudential has the highest and Bajaj Allianz has the lowest net worth to total assets ratio during 2003-04 to 2012-13.

Application of F test for analyzing net worth to total assets ratio was not significant between the companies, so $H_0$ is accepted and $H_1$ is rejected. However, it was significant over the years, so $H_0$ is rejected and $H_1$ is accepted.

It can be seen that the solvency ratio of Met Life Insurance Co. Ltd. was the lowest among all the companies during the study period 2003-04 to 2012-13 followed by ING Vysya, SBI, Bajaj Allianz, Max Newyork, Reliance, TATA AIA, HDFC Standard, Birla Sun Life and ICICI Prudential respectively.

Application of F test for analyzing solvency ratio was not significant between the companies, so $H_0$ is accepted and $H_1$ is rejected. However, it was significant over the years, so $H_0$ is rejected and $H_1$ is accepted.

The interest coverage ratio was satisfactory in SBI, during 2009-10 to 2012-13 and unsatisfactory during 2003-04 to 2008-09. It was the most satisfactory in ICICI Prudential during 2009-10 to 2012-13. ICICI Prudential has negative interest coverage ratio during 2003-04 to 2008-09. But since 2009-10 to 2012-13, it has shown an increasing trend for interest coverage ratio.

Application of F test for analyzing interest coverage ratio was not significant between the companies and over the years, so $H_0$ is accepted and $H_1$ is rejected.

At last, it can be concluded that the financial performance of the selected private sector life insurance companies with special reference to capital structure and related ratio was the best in Met and
followed by ING Vysya, SBI, Bajaj Allianz, Max Newyork, Reliance, TATA AIA, HDFC Standard, Birla Sun Life and ICICI Prudential respectively.

**References:**


