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Project Work

"Capital Structure"

Theories of capital structure and analysis of Reliance Industries Ltd.

T.Y.B.Com - III
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CAPITAL STRUCTURE

In finance, **capital structure** refers to the way a corporation finances its assets through some combination of equity, debt or hybrid securities. A firm's capital structure is then the composition or 'structure' of its liabilities. For example, a firm that sells Rs. 20 crore in equity and Rs. 80 crore in debt is said to be 20% equity-financed and 80% debt-financed. The firm's ratio of debt to total financing, 80% in this example, is referred to as the firm's leverage. In reality, capital structure may be highly complex and include tens of sources.

The Modidliani-Miller theorem, proposed by Franco Modigliani and Merton Miller, forms the basis for modern thinking on capital structure, though it is generally viewed as a purely theoretical result since it assumes away many important factors in the capital structure decision. The theorem states that, in a perfect market, the value of a firm is irrelevant to how that firm is financed. This result provides the base with which to examine real world reasons why capital structure *is* relevant, that is, a company's value is affected by the capital structure it employs. These other reasons include bankruptcy costs, agency costs, taxes, information asymmetry, to name some. This analysis can then be extended to look at whether there is in fact an optimal capital structure: the one which maximizes the value of the firm.

1. Capital structure in a perfect market :

Assume a perfect capital market (no transaction or bankruptcy costs; perfect information); firms and individuals can borrow at the same interest rate; no taxes; and investment decisions aren't affected by financing decisions. Modigliani and Miller

made two findings under these conditions. Their first 'proposition' was that the value of a company is independent of its capital structure. Their second 'proposition' stated that the cost of equity for a leveraged firm is equal to the cost of equity for an unleveraged firm, plus an added premium for financial risk. That is, as leverage increases, while the burden of individual risks is shifted between different investor classes, total risk is conserved and hence no extra value created.

Their analysis was extended to include the effect of taxes and risky debt. Under a classical tax system, the tax deductibility of interest makes debt financing valuable; that is, the cost of capital decreases as the proportion of debt in the capital structure increases. The optimal structure, then would be to have virtually no equity at all.

2. Capital structure in the real world :

If capital structure is irrelevant in a perfect market, then imperfections which exist in the real world must be the cause of its relevance. The theories below try to address some of these imperfections, by relaxing assumptions made in the M&M model.

2.1 Trade-off theory :- Trade-off theory allows the bankruptcy cost to exist. It states that there is an advantage to financing with debt (namely, the tax benefit of debts) and that there is a cost of financing with debt (the bankruptcy costs of debt). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. Empirically, this theory may explain differences in D/E ratios between industries, but it doesn't explain differences within the same industry.

2.2 Pecking order theory :- Pecking Order theory tries to capture the costs of asymmetric information. It states that companies prioritize their sources of financing (from internal financing to equity) according to the law of least effort, or of least resistance, preferring to raise equity as a financing

means "of last resort". Hence internal debt is used first, and when that is depleted debt is issued, and when it is not sensible to issue any more debt, equity is issued. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required. Thus, the form of debt a firm chooses can act as a signal of its need for external finance. The pecking order theory is popularized by Myers (1984) when he argues that equity is a less preferred means to raise capital because when managers (who are assumed to know better about true condition of the firm than investors) issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this over-valuation. As a result, investors will place a lower value to the new equity issuance.

2.3 Agency Costs :- There are three types of agency costs which can help explain the relevance of capital structure.

- **Asset substitution effect**: As D/E increases, management has an increased incentive to undertake risky (even negative NPV) projects. This is because if the project is successful, share holders get all the upside, whereas if it is unsuccessful, debt holders get all the downside. If the projects are undertaken, there is a chance of firm value decreasing and a wealth transfer from debt holders to share holders.
- **Underinvestment problem**: If debt is risky (eg in a growth company), the gain from the project will accrue to debt holders rather than shareholders. Thus, management have an incentive to reject positive NPV projects, even though they have the potential to increase firm value.
- **Free cash flow**: unless free cash flow is given back to investors, management has an incentive to destroy firm value through empire building and perks etc. Increasing leverage imposes financial discipline on management.

2.3 Other :-

- The neutral mutation hypothesis firms fall into various habits of financing, which do not impact on value.
- Market timing hypothesis—capital structure is the outcome of the historical cumulative timing of the market by managers.
- Accelerated investment effect- even in absence of agency costs, levered firms use to invest faster because of the existence of default risk.

3. Arbitrage :

A capital-structure arbitrageur seeks opportunities created by differential pricing of various instruments issued by one corporation. Consider, for example, traditional bonds and convertible bonds. The latter are bonds that are, under contracted-for conditions, convertible into shares of equity. The stock-option component of a convertible bond has a calculable value in itself. The value of the whole instrument *should* be the value of the traditional bonds *plus* the extra value of the option feature. If the spread, the difference between the convertible and the non-convertible bonds grows excessively, then the capital-structure arbitrageur will bet that it will converge.

4. Meaning :

The primary functions of finance manager are :

- To estimate requirement of funds,
- To procure funds from various sources,
- To ensure effective utilization of funds.

Once the requirement of funds has been estimated, a decision regarding various sources from which these funds can be raised has to be taken. A proper mix of the various sources has to be worked out in such a manner that cost of raising the funds is

minimum an earning per share is maximum. This is known as capital structure decision.

According to Gestenberg " Capital Structure of a Company is the make up of its capitalization."

According to John Humpton " Capital Structure is the composition of debt and equity securities that comprise a firm financing of its assets."

5. Significance :

The Capital Structure decisions are very significant in financial management, as they influence debt equity mix which ultimately affects shareholders return & risk.

- The rate of dividend per share depends upon the capital structure of the Company.
- Capital structure is important from the view point of Company's financial liquidity and for raising capital for future.
- If capital structure is not framed properly, the situation of under or over capitalization may be created.

The larger portion of debt in company's capital structure will increase financial risk in company whereas larger portion of equity in Company's capital structure will decrease EPS (Earning Per Share).

An appropriate debt equity mix can be determined taking into considering the following factors :

5.1. Leverages :

Leverage is one of the tool to evaluate the risk return relationship. It indicate level of risk involved in a firm. There are mainly three types of leverages :

a. DOL (Degree of Operating Leverage),
b. DFL (Degree of Financial Leverage)
c. DCL (Degree of Combined Leverage).

a) DOL (Business Risk / Operating Risk) :- DOL refers to the ability of the firm to make maximum utilization of operating fixed cost and to evaluate what will be the effect of change in sales on EBIT (Earning Before Interest & Taxes).

$$\textbf{DOL} = \frac{\boldsymbol{Contribution}}{\boldsymbol{EBIT}} \quad \boldsymbol{or} \quad \frac{\%\ \boldsymbol{change\ in\ EBIT}}{\%\ \boldsymbol{change\ in\ Sales}}$$

b) DFL (Financial Risk) : - DFL refers to the ability of the firm to make maximum utilization of financial fixed cost and to evaluate what will be the effect of change in EBIT on EPS.

$$\textbf{DFL} = \frac{\boldsymbol{EBIT}}{\boldsymbol{EBT}} \quad \textbf{or} \quad \frac{\%\ \boldsymbol{change\ in\ EPS}}{\%\ \boldsymbol{change\ EBIT}}$$

c) DCL : - DCL refers to the ability of the firm to make maximum utilization of total fixed cost.

$$\textbf{DCL} = \boldsymbol{DOL} \times \boldsymbol{DFL} \quad \boldsymbol{or} \quad \frac{\boldsymbol{Contribution}}{\boldsymbol{EBT}} \quad \textbf{or} \quad \frac{\%\ \boldsymbol{change\ in\ EPS}}{\%\ \textbf{change in Sales}}$$

A Company having higher operating leverage should be accompanied by a low financial leverage and vice versa otherwise it will face problems of insolvency & inadequate liquidity.

5.2. Trading on Equity :

A Company may raise funds either by issue of share or by borrowings carry a fixed rate of interest & this interest is payable irrespective of fact whether there is profit or not

In case return on investment (ROI) is more than rate of interest on borrowed funds, it is said that the Company is trading on equity.

5.3. Coverage Ratio :

The ability of the firm to use debt in the capital structure can also be judged in terms of coverage ratio namely EBIT / Interest higher the ratio, greater is the certainty of meeting interest payments.

6. Options Available : Following options are available in capital structure

6.1. Total Capital Structure of a firm:

Total Capital

Equity Capital	Debt Capital
(Equity & preference share capital)	(Term loans, debentures, long term loans)

- A firm has to maintain a proper balance between
  - Long Term Funds & Short Term Funds, and
  - Loan Funds & Own Funds.
- The following options are available to a firm :
  - Capital structure with equity share only,
  - Capital structure with equity share & preference share,
  - Capital structure with equity share & debenture,
  - Capital structure with equity share, debenture & preference share.

A. Equity Capital :

Advantages :

- Payment of dividend only when there is sufficient profit.
- Management need not to make provision for repayment of finance.
- Control over management remains with equity share holders.
- Company does not require to mortgage its assets for issue of equity share, so mortgage asset for long term debt in future can be created.

Disadvantages :

- The expenses for procurement of capital through equity share is more.
- Benefit of trading on equity can't be obtained.
- Equity dividend is not tax deductible.
- This may sometimes leads to over capitalization.

B. Debt Capital :

Advantages :

- The administrative & issuing cost are normally lower than raising equity capital.
- Cost advantage due to the ability to set debt interest against profit for tax purposes.
- The pre tax rate of interest is invariably lower, than the return required by equity capital suppliers.
- Company can obtain benefit of trading on equity.

Disadvantages :

- Payment of interest whether there is profit or loss.
- Capacity of creating future debt for the company reduces.
- There is fear of loss of control over management.
- Assets are mortgaged to debenture holders so, they have first right on all assets of the company.

6.2. Factors to be considered while evaluating the options :

- **Indifference point : -**

Indifference point refers to the level of EBIT at which the EPS for both the given options of raising the funds are equal.

$$\text{IDP} = \frac{(EBIT - I1)(I - T)}{N1} = \frac{(EBIT - I2)(I - T)}{N2}$$

Where, T = Corporate tax rate,

I1 = Interest charge for financial alternative one,

I2 = Interest charge for financial alternative two,

N1 = Number of equity share of the financial alternative one,

N2 = Number of equity share of the financial alternative one,

EBIT = Earnings before interest & taxes.

- **Financial Break Even Point (FBEP) :**

FBEP refers to the level of EBIT at which EPS is Nil. Here the company earns an amount equivalent to its financial commitments. If EBIT less than FBEP then, EPS will be negative.

6.3. Corporate Taxes :

When taxes are applicable to corporate income, debt financing is advantageous. This is because dividend & retained earnings are not deductible for tax purposes; interest on debt is a tax deductible expense. As a results, the total income available for both stockholders & debt holders is greater when debt capital is used.

7. Factors To Be Considered :

- **Profitability :** - The most profitable capital structure is one that tends to minimize cost of finance and maximize EPS (Earning Per Share).
- **Flexibility :** - The capital structure should be such that capital structure can raise funds whenever needed.
- **Conservation :** - The debt contained in capital structure should not exceed the limit which the capital structure can bear.
- **Solvency :** - The capital structure should be such that firm does not run risk of becoming insolvent.
- **Control :** - The capital structure should be so devised that it involves minimum risk of loss of control of the Company.

8. Optimum Capital Structure :

The optimum capital structure is that capital structure on combination of debt and equity that leads to the maximization of the firm and minimizes the firm's overall cost of capital.

Optimum capital structure is also called 'Appropriate Capital Structure' or 'Sound Capital Structure'.

It is however difficult to find out optimum debt and equity mix where the capital structure would be optimum because it is difficult to measure a fall in the M.V (Market Value) of a equity share on account of increase in risk due to high debt content.

8.1. Assumptions :

- There are only two kinds of funds used by firm i.e., debt & equity.
- Taxes are not considered.
- The payout ratio is 100%.
- The firm has perpetual life.
- The firm's total financing remains constant.
- Business risk is constant over time.

8.2. Theories of Determination of Optimum Capital Structure :

1. Net Income Approach,
2. Net Operating Income Approach,
3. Modigliani-Miller Approach,
4. Traditional Approach.

8.2.1. Net Income Approach (NI Approach) :

- This approach is given by "Durant David".
- According to this approach, the capital structure decision is relevant to the valuation of firm.
- An increase in financial leverage will lead to decline in weighted average cost of capital (WACC), while the value of the firm as well as market value of share will increase conversely a decrease in leverage will cause increase in the WACC & a consequent decline in the value of firm as well as M.V. of shares.

- The value of firm & value of equity share are determined as under :

  - Value of Firm $(V) = S + B$

    Where, S = Market Value of Equity,
    B = Market Value of Debt.

  - Market Value of Equity $(S) = \frac{NI}{Ke}$

    Where, NI = Net Income available in equity share holder,
    Ke = Equity Capitalization Rate.

8.2.2 Net Operating Income Approach (NOI Approach) :

- According to 'NOI Approach', the value of the firm is independent of its capital structure.
- Here it is believed that increase in the employment of debt capital increase the expected rate of return by the shareholders & the benefit of using relatively cheaper debt funds is offset by the loss arising out of the increase in cost of equity.
- According to NOI Approach, the market value of the firm depends upon the Net Operating Profit 'or' EBIT 'or' WACC.
- The value of firm & value of equity share are determined as under :

  Value of firm $(V) = \frac{EBIT}{Ko}$

  Where, EBIT = Earnings before Interest & Taxes,
  Ko = Overall Cost of Capital

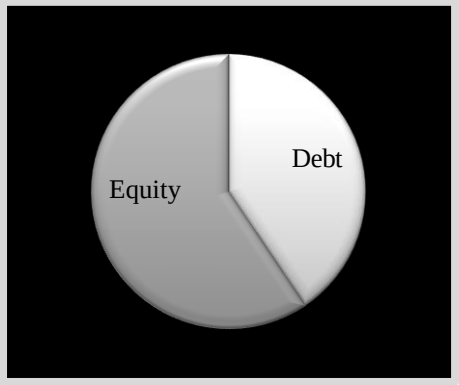
Value of Equity (S) = V – B

Where, V = Value of Firm,
B = Value of Debt.

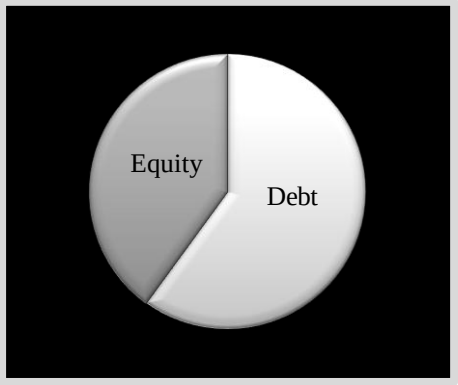
8.2.3. Modigliani – Miller Approach (MM Approach) :

Additional Assumptions :

- Capital markets are perfects.
- All investors are rational.
- Non-existence of corporate taxes.
- Firms can be grouped into equivalent risk classes on the basis of their business risk.
- According to them, cost of capital is independent of capital structure and therefore, there is no optimal value.
- The value of the levered firm can neither be greater nor lower than that of an unlevered firm according to this approach. The two must be equal. There is neither advantage nor disadvantage in using debt in the firm's capital structure. The total value of the firm stays the same as shown below :



Firm Value



Firm Value

In their 1963 article, they recognized that value of the firm increases or cost of capital will decrease where corporate taxes exist. As a result there will be some difference in the earnings of equity & debt holders in a levered & unlevered firm and value of levered firm will be greater the value of unlevered firm by an amount equal to amount of debt multiplied by corporate tax rate.

8.2.4. Traditional Approach :

- The traditional approach strikes a balance in NOI approach and MM approach.
- **Main propositions :**
  i. The cost of debt capital remains more or less unchanged upto certain degree of leverages but rises thereafter at an increasing rate.
  ii. The cost of equity capital remains more or less unchanged or rises only gradually upto a certain degree of leverage but rises sharply thereafter.
  iii. As a consequence of the above behavior of cost of equity capital, the average cost of capital structure decreases upto a certain point. Capital structure remains more or less unchanged for moderate increase in leverage & capital structure rises beyond a certain point.
- The principle implication of this approach is that cost of capital is dependent on the capital structure. Thus it is possible to have an optimum capital structure which would minimize the cost of capital.

9. Making a Change in Capital Structure :

What should a firm do when it finds that its desired capital structure differs significantly from its current capital structure ?

There are two basic choices :

i) Change its capital structure slowly, or
ii) Change its capital structure more quickly.

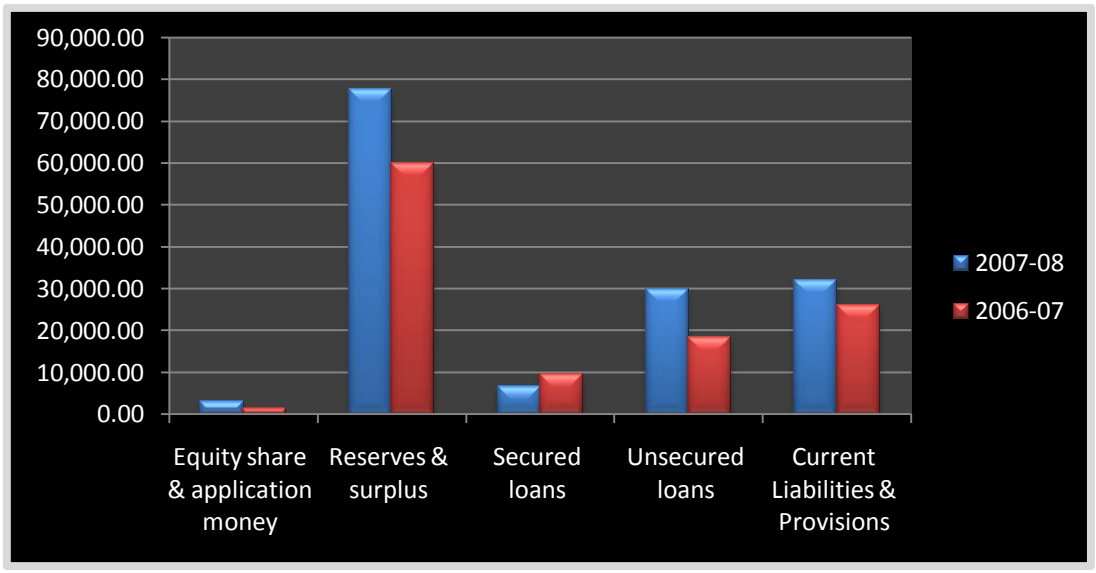
A firm can alter its capital structure slowly by adjusting its future financing mix appropriately. Alternatively, the firm could change its capital structure quickly through an exchange offer, recapitalization offer, debt or share repurchase or stock for debt swap.

ANALYSIS OF CAPITAL STRUCTURE OF

RELIANCE INDUSTRIES LTD.

(RS. In Corores)

PARTICULERS	2007-2008	2006-2007	IN/DE	%
SHARE HOLDER FUNDS & LIABILITIES:				
Equity share & application money	3,135.79	1,453.35	1,682.44	115.76
Reserves & surplus	77,441.55	59,861.81	17,579.74	29.37
Secured loans	6,600.17	9,569.12	-2,968.95	-31.03
Unsecured loans	29,879.51	18,256.61	11,622.90	63.66
Current Liabilities & Provisions	32,221.16	25,858.06	6,363.10	24.61
Total Funds	**1,49,278.18**	**1,14,998.95**	**34,279.23**	**29.81**
Application Of Funds :				
Fixed assets				
Gross block	1,04,229.10	99,532.77	4,696.33	4.72
Less : revaluation reserve	871.26	2,651.97	-1,780.71	-67.15
Less : accumulated depreciation	42,345.47	35,872.31	6,473.16	18.05
Net block	61,012.37	61,008.49	3.88	0.01
Capital work-in-progress	23,005.84	7,528.13	15,477.71	205.60
Investments	22,063.60	16,251.34	5,812.26	35.76
Current assets, loans & advances	43,196.37	30,210.99	12,985.38	42.98
Total	**1,49,278.18**	**1,14,998.95**	**34,279.23**	**29.81**
Book value of unquoted investments	12,746.75	9,438.20	3,308.55	35.05
Market value of quoted investments	53,126.09	24,454.46	28,671.63	117.24
Contingent liabilities	37,157.61	46,767.18	-9,609.57	-20.55
Number of equity sharesoutstanding(Lacs)	14536.49	13935.08	601.41	4.32

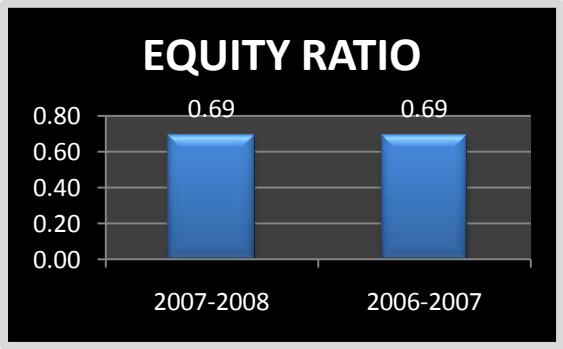


Interpretation:

By analyzing the data we can see that, the share capital is rising by an amount of Rs. 1682.44 crores. While reserves and surplus increases by 17,579.74 crores. The secured loans decreased by -2,968.95and unsecured loans have increased by Rs. 11,622.90 crores. Current Liabilities and Provisions increased by 6,363.10 crores .

Equity Ratio:

Particulars	2007-08	2006-07
Net Worth	80,577.34	61,315.16
Total Capital Employed	1,17,057.02	89,140.89
Ratio (In Times)(Net Worth/ Total Capital Employed)	**0.69**	**0.69**

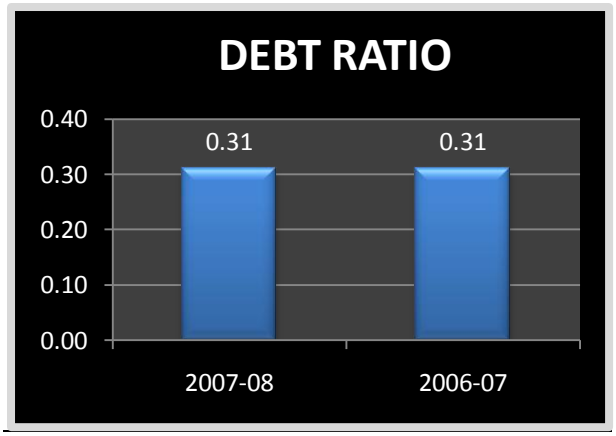


Interpretation:

Equity ratio for the year 2007-08 is 0.69 times & for 06-07 is also 0.69 which shows stability in co.'s equity capital format .

DEBT RATIO

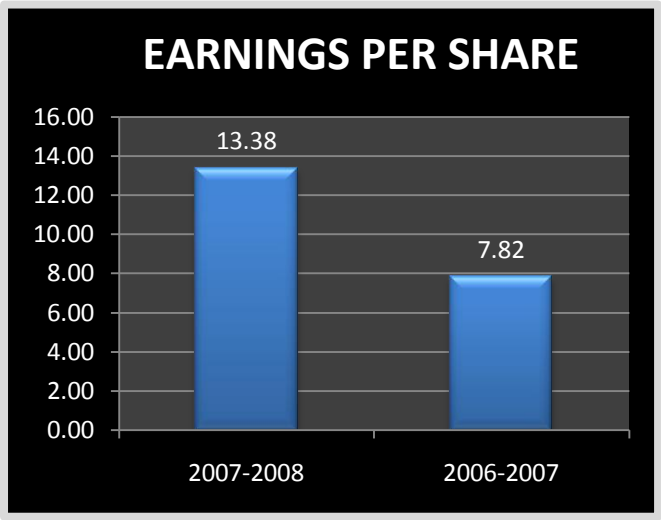
Particulars	2007-2008	2006-2007
Long Term Debt	36,479.68	27,825.73
Total Capital Employed	1,17,057.02	89,140.89
Ratio (In Times) =Long Term Debt/Total Capital Employed	**0.31**	**0.31**



Interpretation:

Debt ratio for the year 2007-08 is 0.31 times & for 06-07 is also 0.31 times which shows stability in co.'s debt format .

EARNINGS PER SHARE		(RS. In Lacs)
Particular	2007-2008	2006-2007
Net Profit for Equity Shares	19,458.00	10,908.00
No. of Equity Shares	1,454.00	1,394.00
Ratio (In Times)	**13.38**	**7.82**



Interpretation:

Because of maintained capital structure , Earning per share is increasing in 07-08 as compare to 06-07 .

-: SOURCES:-

- Study Material – ICAI
- Corporate Financial Management by Douglas R. Emery & John D. Finnerty.
- Financial Management by Ravi M. Kishor.
- Web :-

  "http://www.moneycontrol.com"

  "http://en.wikipedia.org/wiki/Capital_structure"