



June 6, 2007

**BUSINESS FINANCE DECISIONS**

(MARKS 100)

(3 hours)

- Q.1 Your company has identified a number of profitable projects for investment, having good Internal Rate of Return projections. However, due to shortage of available funds, the company cannot invest in all the projects.

You have been assigned to determine the best strategy for capital rationing. Following information is available about the projects:

	A	B	C	D	E
Investment needed today (Rs in million)	10.5	6.4	9.7	12.2	13.1
Projected annual cash inflows (Rs in million)	3.5	1.7	2.9	3.0	6.9
Cash inflows start from the end of the year	1	2	2	3	4
Life of the project (years)	6	10	9	12	10
Appropriate discount rate for relevant risk levels	10%	13%	8%	12%	11%

Total funds available with the company for investment are Rs 43 million. All projects are mutually exclusive except for D and E which are mutually dependent. Assume that all the projects are non-divisible.

**Required:**

Determine the most beneficial investment mix.

(12)

- Q.2 You are head of Finance Department of Fantastic Limited. Mr. Young has recently joined your company as Assistant Manager. He is familiar with stock market and deals on his personal account.

He submitted some suggestions to the board of directors for investment in stock market. One such suggestion was about arbitrage opportunity in shares of Fast Limited as detailed below:

	<b>Rupees</b>
Spot price	181.00
Future price (two months from now)	187.00
Transaction cost (Spot)	0.20
Transaction cost (Future)	0.15

The Directors, being attracted with such effortless profit, asked you to analyze this opportunity. You have extracted the following further information:

- Shares of Fast Limited had been performing quite well and gained around Rs 95 during the last three months.
- 10% margin is payable on the future transaction which is adjustable at the time of final settlement.
- Future is marked to market on monthly basis i.e. the difference between the transaction price and the quoted price at the end of the month is recovered / paid as the case may be.
- Company's incremental rate of borrowing is 14% per annum.

**Required:**

- (a) Compute net gain on suggested arbitrage transaction. (04)  
 (b) At what price of share in future market quoted at the end of the first month, the company may incur loss? (06)

Q.3 During the board meeting of Venus Industries Limited, one of the directors had stressed the need to review the company's dividend policy. According to him, the decision regarding dividend payment should be based on 'Tax Preference Theory', which suggests that investors prefer the return in the form which is more beneficial from tax point of view.

Historically, the company has been paying a dividend of Rs 15 every year. Tax rate applicable on dividends is 10% whereas capital gains are exempt from tax. The transaction costs associated with sales/purchase of shares are estimated at 0.5% of the value involved.

Currently company's shares are being traded at Rs 150 (Ex-dividend). Based on company's earning potential, the share price is expected to increase by 15% by the end of the year.

**Required:**

Estimate the impact on the price of the company's share if the directors decide to disclose that they do not intend to distribute dividend in the forthcoming year to allow the shareholders to avail the benefit of tax exemption on capital gains. Assume that the market is semi-strong form efficient. (09)

Q.4 Speedo Motors Limited has been in the business of Auto Assembling for over 10 years. The economic environment has induced the company to think about other projects also.

The data relating to the company's performance is as follows:

Return on equity	17%
Dividend yield	11%
Standard deviation of returns	32%

The company is considering the following two projects:

- (i) Establishing an auto parts factory; or  
 (ii) Entering into artificial leather manufacturing industry.

The expected returns etc. from these projects are as follows:

	Auto Parts	Artificial Leather
Average return	19%	13%
Standard deviation of returns	43%	27%
Co-relation of returns with existing operations	0.92	0.23

Market returns are 12% with a standard deviation of 20%. It is expected that after any such investment is made, the new investment will constitute about 30% of the new market value of the company.

**Required:**

Due to shortage of funds, the company can opt for only one of the above projects. Evaluate the two options and advise. Combine standard deviation can be calculated by using the following formula:

$$\sqrt{(\sigma_1 W_1)^2 + (\sigma_2 W_2)^2 + (2 \times \text{Correlation} \times \sigma_1 W_1 \times \sigma_2 W_2)}$$

- Q.5 Zuhair Limited is considering introducing a new product. Market research was carried out by the company to determine the sales potential of the product, which costed Rs 175,000. Research suggested that the demand will last for 4 years and the company will be able to manufacture and sell 100,000 units each year. The initial price shall be Rs 110 per kg and will increase at a constant rate of 10% per annum. Production batch size shall continue to be of 12,500 units.

Labour related information is as follows.

	Rate Rs per hour	Man Hours per batch	Learning Curve	Surplus Labour Hours Available
Skilled Labour	100	6,250	NIL	20,000 hours available in Year-1 and Year-2.
Unskilled Labour	40	5,000	90%	NIL

The learning curve is expected to continue till the 8th batch. Based on the above, it has been determined that 3,121 unskilled labour hours shall be required to produce the 8th batch in the first year.

Labour charges are expected to increase by 5% per annum.

Three types of raw material will be required to manufacture this product. The relevant information is as under:

Material	Available in stock (kgs.)	Requirement per unit	Purchase price Rs / kg	Current Price Rs / kg	Resale Price Rs / kg
A	100,000	1.0 kg	10	8	6
B	20,000	0.5 kg	12	17	15
C	150,000	2.0 kg	18	20	16

Prices of raw material are expected to remain constant through out the period. Material A is in regular use of the company. Material B would be sold if not used. Material C was purchased few years back and is considered obsolete.

The production will be carried out on two machines RR and YY. RR was purchased two years ago at a cost of Rs 900,000. It is working below capacity and can easily be used for producing the required quantity of the new product. Machine YY is available in the market at a cost of Rs. 750,000. Resale values of machines RR and YY after the end of the project life are estimated at Rs 90,000 and Rs 75,000 respectively. The company has a policy to depreciate the assets on straight line basis over the useful life of the machines.

Zuhair Limited cost of capital is 20% per annum. All the payments and receipts are expected to arise on the last day of the year except where otherwise stated.

**Required:**

Determine whether Zuhair Limited should introduce the new product. Ignore taxation. (17)

- Q.6 Maturated Limited, a manufacturer of tomato ketchup, is in the process of expanding its existing manufacturing facility in view of a surge in demand in the market. The cost of the new facility is estimated at Rs 174 million, to be financed by equity and bank borrowings in equal proportion. The borrowing is available at a fixed mark-up of 10% or at KIBOR + 2.0%.

(4)

Another company Goldenage Limited, engaged in garment manufacturing, has been awarded a three years contract for factory uniforms, by a large group of industries. This order requires expansion in facilities, the cost of which is estimated at Rs 250 million. 70% of the cost is to be financed through equity and 30% through debt. Negotiations finalized with the bank indicate a fixed mark-up of 12.5% or KIBOR + 4.25%.

**Required:**

- (a) Advise each company whether they should opt for a fixed or a floating mark-up rate. Support your opinion with reasons. **(03)**
- (b) An investment bank has offered an interest swap arrangement to the two companies. Should the companies accept its offer? **(06)**
- (c) Assuming that both companies agree on a swapping arrangement on loans amounting to Rs 75.0 million each and the actual KIBOR for the year is 9.0%, compute the amount that will be paid by one company to the other. (Assume that profit on swap arrangement is to be shared equally). **(06)**

Q.7 The directors of Infinity Limited are interested in evaluating the impact of variation in capital structure on the company's value and cost of capital. As a first step, they wish to investigate the effect if the capital structure was 80% equity and 20% debt.

They have estimated that the following relationship exist between interest cover, credit rating and cost of debt:

Interest Cover	Credit Rating	Required return on debt
Greater than 8.0	A	8%
4.0 to 8.0	B	9%
Less than 4.0	C	11%

Following is an extract from profit and loss account of the company for the year ended December 31, 2006.

	Rs in million
Net operating income before depreciation	210
Depreciation for the year	40
Interest on long term debt @ 11%	55

Capital spending in each year would almost be equal to the depreciation charged during that year. Growth rate of operating cash flows after capital spending may be assumed to be constant and unaffected by any change in capital structure.

Market value of equity and debt is Rs 795 million and Rs 500 million respectively. Company's equity beta is 1.4. The debt beta may be assumed to be zero. The risk free rate is 5.5% and the market return is 14%.

Tax rate applicable on company's income is 35%.

**Required:**

- (a) Compute the following:
  - (i) Existing Weighted Average Cost of Capital;
  - (ii) Weighted Average Cost of Capital at the revised debt equity ratio using an approximate 'required return on debt' (For this calculation assume that the market value of the company after restructuring will remain the same).
  - (iii) Growth percentage of operating cash flows after capital spending; and
  - (iv) Revised market value of equity and debt.
- (b) Calculate the rate of return on debt on the basis of revised market value. **(22)**

**(THE END)**