

FINANCIAL MANAGEMENT

July-August 2024

Time allowed- 3:30 hours

Total marks- 100

[N.B. - The figures in the margin indicate full marks. Questions must be answered in English. Examiner will take account of the quality of language and of the manner in which the answers are presented. Different parts, if any, of the same question must be answered in one place in order of sequence.]

Marks

1. a) BD Limited has issued 100,000 Tk. 10 equity shares which are at present selling for Tk. 30 per share. The company has plans to issue rights to purchase one new equity share at a price of Tk. 20 per share for every four shares.

Requirements:

- i) Calculate the theoretical ex-rights price of BD Limited's equity share. 3
- ii) Calculate the theoretical value of a BD Limited right before the shares sell ex-rights. 3
- iii) The chairman of the company receives a phone call from an angry shareholder who owns 1,000 shares. The shareholder argues that he will suffer a loss in his personal wealth due to this rights issue, because the new shares are being offered at a price lower than the current market value. The chairman assures him that his wealth will not be reduced because of the rights issue, as long as the shareholder takes appropriate action. Is the chairman correct? 9
- What would be the effect of the right issue of this shareholder's wealth if -
- he sells all the rights.
 - he exercises half the rights and sell the other half.
 - he does nothing at all.

- b) Sobhan Rice Mill sales all of its rice to wholesaler on credit. Annual credit sales for 2022 stands at BDT 500 million. Average collection period is 30 days and average bad debt is 3%. Sobhan uses a bank overdraft account for working capital purpose from a bank which charges Sobhan 12% per annum. Recently Sobhan Rice Mill got 2 offers from two financial institutions who are offering Factoring services. The offers are:

	JEMD Finance	JQED Finance
Features		
Receivable management	Yes	Yes
Non-recourse	Yes	No
Average receivable days	21 days	30 days
Factoring Fee	3%	0.50%
Financing	75%	100%
Financing Rate	15%	8%

Currently Sobhan Rice Mill has to incur BDT 3,500,000 annually for receivable management which can be saved if the factor service is taken from any of the above financial institutions.

Requirements:

- i) Using the above information calculate (1) the cost of current situation (2) cost of Non-recourse factoring and (3) cost of recourse factoring. 6
- ii) Should Sobhan Rice Mill take factoring service? If yes, which one should be taken? Recourse or non-recourse? Justify your answer. (assume 365 days in a year.) 4
2. XYZ Corporation is a publicly traded company in the manufacturing sector. You are tasked with evaluating XYZ Corp.'s financial metrics and advising on strategic financial decisions by using the following data to answer the questions below:
1. **Capital Structure:**
 - o Debt: BDT 150 million at 6% interest rate
 - o Equity: BDT 300 million
 - o Total Assets: BDT 500 million
 2. **Market Information:**
 - o Risk-free rate (rf): 4%
 - o Expected return on the market (rm): 10%
 - o Beta (β) of XYZ Corp.: 1.2
 - o Corporate tax rate: 30%

3. Dividend Policy:

- Current dividend payout ratio: 40%
- XYZ Corp. is considering a new investment project that requires an initial investment of BDT 50 million and is expected to generate BDT 12 million in annual cash flows indefinitely.

Requirements:

- a) Calculate the cost of equity using the Capital Asset Pricing Model (CAPM). 3
- b) Determine XYZ Corp.'s Weighted Average Cost of Capital (WACC). 3
- c) Evaluate the impact of the new investment project on XYZ Corp.'s value and dividend policy using the Modigliani-Miller Model assumptions. Discuss the implications of the project on shareholder wealth and the firm's optimal capital structure. 4

3. TechGlobal Ltd, a multinational corporation based in the USA, has entered into an agreement to purchase high-end semiconductor equipment from Japan for JPY 500 million. The payment is due in six months. TechGlobal Ltd is concerned about potential fluctuations in the USD/JPY exchange rate and is considering different hedging strategies to mitigate this risk.

The current spot exchange rate is 1 USD = 110 JPY. The annual interest rates in the USA and Japan are 3% and 1% respectively. The 6-month forward exchange rate is 1 USD = 108 JPY. The futures price for a 6-month contract is also 1 USD = 108 JPY. The company's cost of capital is 6%.

Requirements:

- a) Forward Contract Hedging: 4
 - Calculate the amount in USD that TechGlobal Ltd will need to pay if they enter into a forward contract at the current 6-month forward exchange rate.
 - Discuss the advantages and disadvantages of using a forward contract in this scenario.
- b) Future Contract Hedging: 4
 - Calculate the amount in USD that TechGlobal Ltd will need to pay if they hedge using futures contracts at the current 6-month futures price.
 - Compare the effectiveness of futures contracts versus forward contracts in this scenario.
- c) Money Market Hedging: 6
 - Describe the steps involved in using a money market hedge.
 - Calculate the amount in USD that TechGlobal Ltd will need to pay today to fully hedge their exposure using a money market hedge.
 - Compare the cost of money market hedging to the forward and future contracts.
- d) Foreign Exchange Option Hedging: 6
 - Explain how TechGlobal Ltd could use a foreign exchange option to hedge their exposure.
 - Assume the premium for a 6-month call option on JPY at a strike price of 108 JPY/USD is 2%.
 - Calculate the total cost of this option and discuss the benefits of using options compared to other hedging methods.
- e) Recommend the best hedging strategy for TechGlobal Ltd, considering both the financial outcomes and the qualitative factors 2

4. BC Limited, a Bangladeshi company which trades frequently with Sri Lanka, has sent a net payment in three months' time of LKR 25 million to make. Market traded option prices (Tk. 31,250 contract size) in the Sri Lanka are as follows: (The options relate to the purchase or sale of Taka)

Exercise price (LKR/Tk.)	June contracts		September contracts	
	Calls	Puts	Calls	Puts
1.98	1.65	0.41	2.38	0.71
2.00	0.56	1.20	1.01	1.57
2.02	0.17	2.65	0.48	3.45

Options premia are in cents per Taka and are payable up front. Assume that it is now 1 June and the current spot rate is LKR 1.97 /Tk.

Requirements:

- a) How many options contracts should BC Limited enter into to hedge the transaction given, assuming a strike price of LKR 2.00 / Tk. is chosen? 1
- b) Should BC Limited enter into put or call option? 1
- c) Which date options should BC Limited enter into? 1

- d) What will be the cost, expressed to the nearest Taka, of the premium to obtain the required number of contracts to hedge the transaction at a rate of LKR 2/ Tk.? 1
- e) Assuming a strike price of LKR 2, illustrate the impact of an options hedge assuming spot rates in three month of either 4
- i) LKR 1.98 / Tk. ii) LKR 2.02 / Tk.

5. Kamal Printing is considering the purchase of a new printing press. The total installed cost of the press is BDT 2.2 million. This outlay would be partially offset by the sale of an existing press.

The old press has zero book value, cost BDT 1 million 10 years ago, and can be sold currently for BDT 1.2 million before taxes. As a result of acquisition of the new press, sales in each of the next 5 years are expected to increase by BDT 1.6 million, but product costs (excluding depreciation) will represent 50% of sales. The new press will not affect the firm's net working capital requirements. The new press will be depreciated under double declining balance method (200% of normal depreciation rate) and using the half year convention*. The useful life of new asset is 5 years. Capital allowance is applicable in the following year of disposal for any amounts that is not absorbed by depreciation. The firm is subject to a 40% tax rate on both ordinary income and capital gains. Wells Printing's cost of capital is 11%. (Note: Assume that both the old and the new press will have terminal values of 0 at the end of year 6.)

* Half year convention means half year depreciation will be applicable at the year of acquisition and half yearly depreciation will be applicable in the following year of disposal.

Requirements:

- a) Determine the initial investment required by the new press. 3
- b) Determine the operating cash inflows attributable to the new press. (Note: Be sure to consider the depreciation in year 6.) 3
- c) Determine the payback period. 2
- d) Determine the net present value (NPV) and the internal rate of return (IRR) related to the proposed new press. 5
- e) Make a recommendation to accept or reject the new press, and justify your answer. 2
6. a) Arrow Ltd is considering purchasing the entire share capital of Target Ltd. Arrow operates on a five year planning horizon and believes that Target will be able to generate operating cashflows (after deducting funds for necessary reinvestment) of Tk.1 million per annum before interest payments.
- The following information is also relevant but has not been included in the above estimates.
- (1) Target's head office premises can be disposed of and its staff can be relocated in Arrow's head office. This will have no effect on the operating cashflows of either business but will generate an immediate net revenue of Tk. 2 million.
- (2) Synergistic benefits of Tk. 200,000 per annum should be generated by the acquisition.
- (3) Target has loan stock with a current market value of Tk. 1.5 million in issue. It has no other debt.
- (4) Arrow estimates that in five years' time it could, if necessary, dispose of Target for an amount equal to five times its annual cashflow.
- Arrow believes that a WACC of 20% per annum reflects the risk of the cashflows associated with the acquisition.
- Requirement:**
- Calculate the maximum price to be paid for Target Ltd. 8
- b) Farmgate Ltd expects to have a competitive advantage over its competitions for a period of four years. The following forecasts relating to the value drivers for this competitive advantage period have been created:

Year	1	2	3	4
Sales growth %	10	8	5	3
Operating profit margin %	10	12	12	12
Incremental non-current assets invetsment (as % of sales increase)	6	4	2	2
Incremental working capital invetsment (as % of sales increase)	4	3	2	2

The following information is also relevant:

- (i) Current sales for the year is Tk. 550 million.
- (ii) Tax on profits is expected to be paid at a rate of 21% for the foreseeable future
- (iii) Shareholders require a return of 8% per annum
- (iv) Non-current assets will also be sold during the first year and receipts are estimated to be Tk. 12 million
- (v) The present value at the end of year four of the free cash flows for the period following the competitive advantage period can be estimated by applying a multiple of 13 to the year four cash flow
- (vi) No short-term investments are held
- (vii) Debt with a market value of Tk. 225 million is held by Farmgate Ltd
- (viii) Farmgate Ltd has 5 million Tk. 10 shares in issue

Requirement:

Calculate the value of a Farmgate Ltd share using the information provided above.

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