



AFRICAN ECONOMIC RESEARCH CONSORTIUM

Collaborative MA Programme in Economics for Anglophone Africa
(Except Nigeria)

JOINT FACILITY FOR ELECTIVES (JFE) 2010

JUNE – OCTOBER

CORPORATE FINANCE AND INVESTMENT II

Second Semester: Final Examination

Duration: 3 Hours

Date: Thursday, September 30, 2010

INSTRUCTIONS:

1. There are five questions in this examination. All questions carry 25 marks each.
 2. Attempt **ANY FOUR** questions.
 3. Points for each key question parts are indicated to help you budget your time
 4. Be neat, clear and to the point. Importance will be attached to these in grading your work
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Question 1

- (a) The validity of the first proposition by Modigliani and Miller (MM) on capital structure (MM Proposition I) is often argued through the arbitrage process.
- (i) Briefly explain what MM Proposition I is all about. **(3 marks)**
 - (ii) Explain how the arbitrage process is used to prove the validity of this proposition. **(6 marks)**
 - (iii) Briefly explain any two major assumptions of the MM's Proposition I and why each of these assumptions is necessary in the arbitrage proof. **(4 marks)**
- (b) Bamaga Manufacturing is an unleveraged firm that has constant expected operating earnings before interest and taxes (EBIT) of shs. 2 billion. The firm is in the 40 percent corporate tax bracket on profit and its current market value is estimated at shs.12 billion. The firm's management is considering issuing some debt to purchase its equity in order to change its capital structure. This is likely to increase the value of the firm but it is also expected to have an offsetting effect in the form of a rising risk of financial distress. The firm's analysts have estimated, as an approximation, that the present value of any future financial distress cost is shs. 8 billion, and that the probability of distress would increase with leverage according to the following schedule.



Value of Debt	Probability of Financial Distress
shs. 2.5 billion	0.00%
shs. 5.0 billion	1.25%
shs. 7.5 billion	2.50%
shs. 10.0 billion	6.25%
shs. 12.5 billion	12.50%
shs. 15.0 billion	31.25%
shs. 20.0 billion	75.00%

- (i) Estimate the unleveraged firm's cost of equity capital and weighted average cost of capital. **(2 marks)**
- (ii) Estimate the optimum level of debt for Bamaga according to the "pure" MM with-tax model (You can use the values of debt in the schedule above but it is not necessary). **(3 marks)**
- (iii) Using the values of debt in the schedule above, estimate the optimum level of debt for Bamaga when financial distress costs are taken into consideration. **(5 marks)**
- (iv) Compare your results in (ii) and (iii) and point out your key conclusion(s) from the comparison. **(2 marks)**

Question 2

- (a) Explain how each of the following is used in the evaluation of mutual exclusive projects of unequal lives:
 - (i) Equivalent annual cashflows. **(3 marks)**
 - (ii) Finite horizon. **(3 marks)**
- (b) In its efforts to promote investment by domestic firms, the government of Saharaland is offering domestic firms an opportunity to invest in different projects in the newly created special development zone (SDV). However, one condition is that a firm can invest in only one project.

Your firm, which is in the entertainment and amusement industry, has identified two projects that fit into its profile and each requires an annual return of 15 percent: Watersplash and Go Karting. The cashflows of the projects are as shown below.

	Project/Year	0	1	2	3
Cashflows	Watersplash	-600	270	350	300
	Go Karting	-1,800	1,000	700	900



- (i) For each project, make the necessary computations and fill-in a table similar to the one given below: **(8 marks)**

Project: _____

TIME	0	1	2	3
Present value of Cashflows at 15%				
Present value of Cashflows at 20%				
Present value of Cashflows at 25%				
Cummulative Present value of Cashflows at 15%				
Cummulative Present value of Cashflows at 20%				
Cummulative Present value of Cashflows at 25%				

- (ii) Using your computations in (i) above, evaluate each of the project and recommend the project that will be chosen using each of the following rule:

1. The discounted payback period **(1 mark)**
2. The Net present value rule **(1 mark)**
3. The internal rate of return (HINT: Use the results for 20% and 25% and interpolate) **(3 marks)**

- (iii) Is the NPV rule consistent with the IRR rule? If your answer is no, explain the reason behind the inconsistency. **(2 marks)**

- (iv) Estimate the Incremental internal rate of return (HINT: Discount the incremental cashflows at 20% and make an estimation) **(3 marks)**

- (v) Is the NPV rule consistent with the incremental IRR rule? Explain **(1 mark)**

Question 3

- (a) Explain the concept of securitization, its main objectives and how it is used by financial institutions. **(9 marks)**
- (b) Discuss the rationale for using bankruptcy-remote special purpose vehicles (SPVs) in securitization. **(5 marks)**
- (c) Critically discuss the role of securitization in the propagation of the 2008/2009 financial crisis across institutions and economies. **(6 marks)**
- (d) Discuss any two major challenges with securitization. **(5 marks)**



Question 4

- (a) Distinguish the risk structure of interest rates from the term structure of interest rates. (4 marks)
- (b) Explain at least three uses of the risk structure of interest rates and the term structure of interest rates. (6 marks)
- (c) Explain the meaning of each of the following terms and how it is used in securities analysis:
- (i) Odd-Lot Trading (3 marks)
 - (ii) Put/Call Ratio (3 marks)
 - (iii) Short interest (4 marks)
 - (iv) Value Investing (5 marks)

Question 5

- (a) Explain the meaning of a hostile takeover. Discuss any four defensive strategies that a takeover target can employ in a hostile takeover situation. In your explanations indicate the circumstances in which each strategy is likely to work for the takeover target. (12 marks)
- (b) Wasalama Security is analyzing the possible acquisition of Haraka Technologies. Currently Wasalama has 100 million shares trading at shs 36 per share while Haraka has 40 million shares trading at shs 45 per share. Neither firm has debt. Initial analysis by Wasalama shows that the acquisition would increase its annual after-tax cash flow by shs 60 million indefinitely. Wasalama also estimates the appropriate discount rate for the incremental cash flows to be 8 percent. Two alternatives of paying Haraka shareholders are being considered: a cash offer of shs 55 per share or a share exchange of one-third of its post acquisition stock. In the later case Wasalama has to issue new shares.
- (i) Estimate the synergy from the merger as well as the value of Haraka to Wasalama. (2 marks)
 - (ii) Estimate the cost to Wasalama of each alternative as well the NPV to Wasalama of each alternative. (2 marks)
 - (iii) Advise Wasalama as to whether it should proceed with the acquisition and the alternative that it should use. (2 marks)
 - (iv) Estimate the gain from the acquisition to Haraka shareholders under each alternative. Is it always the case that shareholders will prefer the alternative that gives them the most gain as per your computation? Explain (4 marks)
 - (v) Compute the number of new shares to be issued and the post-merger price per share if the merger goes through using share exchange. (3 marks)



- (c) Suppose you have an investment horizon of one year and ABC Ltd's ordinary share is selling at shs 500. If you buy the share now, you expect to sell it after one year for shs 570 but after receiving a shs 35 dividend.
- (i) If your required rate of return is 20 percent, is the share a good buy? Explain. **(3 marks)**
 - (ii) If last year the share paid dividend amounting to shs 30, do you consider it appropriate to value it using the constant growth model? Explain. **(3 marks)**
 - (iii) Explain any three limitations of using the constant growth model in valuing equity securities. **(6 marks)**

