



AFRICAN ECONOMIC RESEARCH CONSORTIUM
Collaborative Masters Programme in Economics for Anglophone Africa
(Except Nigeria)

JOINT FACILITY FOR ELECTIVES (JFE) 2012
JUNE – SEPTEMBER

CORPORATE FINANCE AND INVESTMENT I

First Semester: Final Examination

Duration: 3 Hours

Date: Wednesday, August 1, 2012

INSTRUCTIONS:

1. Answer **ANY FOUR (4)** questions.
 2. All questions carry equal marks.
-

Question 1

- (a)
- (i) Write brief notes to explain the attitude of risk-averse investors as regards *fair games*.
(4 marks)
 - (ii) Assume a utility function of an investor is specified as $U = E(r) - 0.005A\sigma^2$; where U is utility value, A is an index of the investor's risk aversion, 0.005 is a scaling factor for expected return, $E(r)$, and σ^2 is the variance. Using this information explain the assertion that "risk averse investor penalizes the rate of return of risky portfolio by a certain dollar amount".
(4 marks)
- (b) Suppose a 3-month maturity Treasury bill of face value \$15,400 is issued at \$14,630; and the investor is sure that she can rollover the T-bill at least through a period of 12 months.
- (i) Regarding this transaction, shortly describe the concept of bid-ask prices; and indicate cost of the T-bill to the government?
(4 marks)
 - (ii) What is the rate of return to investment in this T-bill over the 3-month period?
(5 marks)
 - (iii) What is the annual effective interest rate of the issued T-bill?
(5 marks)
 - (iv) If there is an alternative investment opportunity, i.e. to put the same money in 1-year certificate of deposit (CD) with interest rate of 20%; and assuming that the CD is insured, therefore it is risk free; do you think an investor would invest in the CD opportunity instead of this T-bill? Whether YES or NO, clearly analyze and give reason.
(3 marks)

Question 2

- (a) Under what situation do you think the firm's investment manager may most likely prefer to use equally weighted stock price indices to judge performance of the company's stock securities portfolio? **(4 marks)**
- (b) In the context of arbitrage pricing theory (APT), assume the identified key systematic risks in the market are *inflation*, *GDP* and *interest rate*. Suppose these factors were forecasted at the beginning of the year as follows: inflation (I) = 5%; GDP growth = 2% and interest rate (r) was expected to remain stable. Suppose also that the stock of a company called Alpha Manufacturers had the following betas: $\beta_I = 0.5$; $\beta_{GDP} = 1$; $\beta_r = -1.2$, and the expected return of the Alpha Manufacturers for the year was 6%. In the course of the year, the company's dependable CEO resigned and that was expected to reduce the annual returns by 3%. At the end of the year, the actual values of the major risk factors were announced as: $I = 6.5\%$; $GDP = 1.5\%$ and interest rate decreased by 2%.
- (i) What was the total systematic risk on the return of Alpha Manufacturers? **(8 marks)**
- (ii) Find the total annual return on the stock of Alpha Manufacturers. **(7 marks)**
- (c) Describe the non-ownership sources of long-term financing. **(6 marks)**

Question 3

- (a)
- (i) Explain the general and specific relevance of different financial statements in valuation and appraisal of assets. **(3 marks)**
- (ii) Analysis of financial ratios must be a starting point rather than the ending point, the analyst must after calculating ratios assess their economic viability. Discuss **(4 marks)**
- (b) Suppose you are provided with the current capital structure of the firm, which is assumed to be optimal as follows: equity (65%) and debt (35%). The desired rates of return for debt and equity are 9% and 11%, respectively. If the total capital is constituted of 500 debt securities and 900 equity securities, and the current market prices are \$650 for debt security and \$1,100 for equity security,
- (i) Calculate the book-value weighted cost of capital. **(3 marks)**
- (ii) Calculate the market-value weighted cost of capital. **(3 marks)**
- (iii) Compare your results in (i) and (ii) to tell the reason they differ. **(2 marks)**
- (c)
- (i) Clearly explain the terms "systematic risk" and "systemic risk" as applied in securities and financial market analyses. **(4 marks)**

- (ii) Suppose a Gas Dealer invested \$100,000 in a financial asset at initial time 0. The gas sales inflows were \$20,000, \$10,000 and \$30,000 during time periods 1, 2 and 3, respectively. Gas procurement outflow of \$45,000 was made once in period 3. If interest rate was 10% for the first two periods, and 8% for the third period, draw a time line and illustrate the net cash flows of the Gas Dealer for each period. **(6 marks)**

Question 4

- (a) Describe “stock beta” and explain its relevance in the CAPM. **(5 marks)**
- (b) Suppose Winners Investment Ltd buys from Securities Broker a call option for the Ivory Supermarket stock at a premium of \$120, with the contract exercise price of \$1,200 on the agreed maturity date. Assume further that the market price of the Ivory Supermarket shares reaches \$1,450 at the option’s maturity.
- (i) Do you think Winners Investment Ltd would exercise its call option? Whether YES or NO, why? **(3 marks)**
- (ii) Assuming Winners Investment Ltd exercises the option at the maturity, show by aid of pay-off diagrams what would be the respective values of the option and profit/loss for both the writer and the holder. **(6 marks)**
- (iii) At what stock price you think this option transaction would be at breakeven point for both parties? Clearly give reason for your answer. **(2 marks)**
- (c)
- (i) Define and highlight the difference between spot rate of a zero coupon bond and yield to maturity of a coupon bond. **(3 marks)**
- (ii) Consider a case where there are two zero-coupon bonds: bond **A** is of 1 year maturity and bond **B** is of 2 years maturity. Both bonds have face value of \$1,000, respectively. The 1 year spot rate is, $r_1 = 8\%$ and the 2 year is, $r_2 = 10\%$. If a two year coupon bond, **C**, of value \$1,000 and interest rate 5% is issued, find its market price and yield to maturity. **(6 marks)**

Question 5

- (a) Describe the concept of proxy fights, and also underscore how the management takes advantage of proxy contests to get their proposals passed by the Board? **(6 marks)**
- (b) You are provide with the dividend and price information indicated in the table as follows:

Table of information		
	Dividend per share (\$)	Market price (\$)
1-Jan		95
15-Feb	2	80
15-Mar	3	90
15-Apr	2	100
15-May	4	105

Calculate the holding period return (for each period); by using the *geometric mean* approach. **(9 marks)**

- (c) Assume a lender currently accepts 6% interest on 1-year loan provided today, and because inflation is expected to be fairly stable in the next 1 year, she has also accept 6% interest on the same amount and maturity loan to be paid a year later. Supposing further that you believe in *liquidity-preference hypothesis* of the term structure of interest rates, do you think this lender has concluded a good deal for her business? **(5 marks)**
- (d) Mt. Kinya Publishers Ltd. has just bought an 8% coupon bond of KSMS worth \$20,000. It is a 2-year maturity bond and interest is paid biannually. What is the present value of this bond at its purchase if the stated annual interest rate in the market is 10%? **(5 marks)**

Question 6

- (a) Ms Lora Wandera has recently won a lottery paying \$20,000 a year for 25 years. She is to receive her first payment a year from now. On the announcement the Lottery Authority said, “today Ms Lora Wandera has got $\frac{1}{2}$ a million lottery because $\$20,000 \times 25 = \$500,000$.”
- (i) If interest rate is 6% what is the true value of the lottery? **(3 marks)**
- (ii) What is your comment on the Lottery Authority’s announcement about the amount received? **(2 marks)**
- (iii) If the Lottery Authority changes its decision so that the payment starts immediately, what would be the true value of the lottery? **(3 marks)**
- (b) (i) Briefly explain the difference between a forward rate and a future spot rate of interest? **(5 marks)**
- (ii) Assume a case of an economy where inflation is rising and interest rates have kept increasing. Suppose you are provided with four consecutive periods’ spot rates of interest as follows: $r_1 = 3\%$; $r_2 = 5\%$; and $r_3 = 6\%$; and $r_4 = 8$. Compute two periods forward rate of interest for a loan to be paid in period 4 **(5 marks)**
- (c) Mean-variance frontier can be divided into two parts: (i) efficient frontier; and (ii) inefficient frontier. By using examples, differentiate these frontiers. **(7 marks)**