National University of Science and Technology

Think in Other Terms

FACULTY OF COMMERCE

DEPARTMENT OF FINANCE

BACHELOR OF COMMERCE HONOURS DEGREE IN FINANCE

RISK MANAGEMENT [CFI 4204]

SUPPLEMENTARY EXAMINATIONS 2014

TIME ALLOWED: 3 HOURS

Instructions to Candidates

1. Answer any **FOUR (4)** questions
2. Show **ALL** calculations

Information to candidates

1. The paper consists of **FOUR (4)** printed pages
2. All six questions carry **25 marks** each

QUESTION ONE

(a) Managing liquidity of a bank is a dynamic process that is influenced by several factors that include demand deposits. Evaluate four ways in which a bank can handle demand deposits in managing its liquidity risk.
(12 marks)

(b) Bank XYZ's balance sheet comprises of floating rate assets and fixed rate liabilities. The bank's risk manager is concerned about this situation as it exposes the bank to risk. She is therefore exploring ways of restructuring the balance sheet to reduce the risk.

Required

i. Explain why the balance sheet's composition exposes the bank to risk. **(2 marks)**

ii. Advise the risk manager on how she can restructure her bank's balance sheet to manage the risk. **(4 marks)**

iii. Briefly discuss the considerations that must be taken into account when restructuring the balance sheet. **(5 marks)**

iv. Explain any other method, besides balance sheet restructuring, that the bank can use to manage the risk. **(2 marks)**

Total = 25 marks

QUESTION TWO

(a) Share prices move according to the following binomial process: during any six month period there is a 50 percent chance that share prices will rise by 8 percentage points and a 50 percent chance that share prices will fall by 8 percentage points. On the other hand, Treasury bills generate a safe return of 4% during any six month period. Design a minimum cost portfolio strategy that guarantees a year end portfolio value of £1 million whatever happens to share prices, but which takes advantage of favourable share price movements.
(17 marks)

(b) Examine two dynamic asset allocation strategies that hedgers can use to insure their portfolios. **(8 marks)**

Total = 25 marks

QUESTION THREE

(a) From the Zimbabwean financial system's perspective, discuss why risk capital is important to financial institutions. **(16 marks)**

(b) A $1 million corporate loan portfolio offers a headline return of 10%. The bank has an operating direct cost of $8 000 per annum and an effective tax rate of 30%. Assume that the portfolio is funded by $1 million of retail deposits with an interest charge of 6%. Economic capital of 7.5% of the loan amount has to be set against the loan portfolio. The risk free interest rate is 7% and the expected loss on this portfolio is 1% per annum. An amount equal to $1 000 is charged on the portfolio, being its share of head office costs. Calculate the after-tax risk adjusted return on capital (RAROC) for this loan. **(5 marks)**

(c) Briefly discuss how a firm that is intending to close down a business line can use RAROC and the hurdle rate to make its decision. **(4 marks)**

Total = 25 marks

QUESTION FOUR

(a) Show how the optimal hedge ratio is determined when hedging with short term interest rate futures contracts. **(5 marks)**

(b) A cash security has a market value of $1.1 million and the face value of short term interest rate futures contracts is $500 000. If the futures price is assumed to have moved exactly in line with the value of the underlying cash market security, calculate the value of the hedge portfolio. **(5 marks)**

(c) If the beta of an equity portfolio is 0.75, show how you would use stock index futures contracts to do the following:

  i. Increase the beta of the portfolio to equal that of the market, and
  ii. Reduce the beta to equal half that of the market. **(6 marks)**

(d) A fund manager has a portfolio of bonds with a face value of £15 million, an average duration of 11.2 years, and an average price of £96.50 per £100 nominal. The cheapest-to-deliver gilt for the June long gilt contract has a duration of 10.75 years, a price of £101.75 per £100 nominal and a price factor of 1.0267198.

Required

i. What action should the manager take to hedge this portfolio? **(2 marks)**

ii. Calculate the number of June contracts required to fully hedge this portfolio. **(7 marks)**

Total = 25 marks

QUESTION FIVE

Critically analyse both internal and external operational risk management strategies that Zimbabwean commercial banks can use to mitigate their exposure.**(25 marks)**

QUESTION SIX

(a) Examine the objectives of Basel III and its proposals on how these objectives will be achieved, with specific reference to the Zimbabwean financial sector. **(9; 6 marks)**

(b) Analyse the main shortcomings of Basel I that precipitated the advent of Basel II, highlighting how the second Accord addressed these shortcomings. **(10 marks)**

Total = 25 marks

END OF EXAMINATION PAPER