STRATHMORE UNIVERSITY

INSTITUTE OF MATHEMATICAL SCIENCES

BBS FINANCIAL ECONOMICS & BBS FINANCE

END OF SEMESTER EXAMINATION

BSF 4126: FINANCIAL RISK MANAGEMENT

DATE: Wednesday, 12th July 2017 Time: 2 Hours

Instructions

1. This examination consists of **FIVE** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.

Question 1

a) Briefly explain how as a bank CIO, will you carry out a risk assessment to provide equity capital based on the following aspects:

i. Country
ii. Industry
iii. Company

(6 marks)

b) As a Risk management team leader in a Bank A. You have new employees that you would like to train to join your team. Using relevant examples, how will you briefly explain the following concepts to them:

i. Financial risk of the bank **(2 marks)**
ii. What makes risk management relevant? **(6 marks)**

c) Considering the 2008 -2009 Financial crisis and especially the example of JP Morgan Private bank, which type of risk management provided more value for the bank during this period and why?

(10 marks)

d) Explain the difference between value at risk and expected shortfall. **(2 marks)**

e) Consider a position consisting of a \$100,000 investment in asset A and a \$100,000 investment in asset B. Assume that the daily volatilities of both assets are 1% and that the coefficient of correlation between their returns is 0.3. What is the 5-day 99% value at risk for the portfolio?

(4 marks)

Question 2

In August 2016, the Legislature, passed an amendment to the Banking Act that sort to cap the interest rates in the banking sector. The amendment to the act, referred to as the Interest Rate Capping Bill introduced the following changes:

i. Placed a cap on lending rates at 4.0% above the Central Bank Rate (CBR)
ii. Placed a floor on the deposit rates at 70% of the CBR.

Over the past 20 years, the banking sector has enjoyed a net interest margin (NIM) of about 16.4% on average, which is higher than the world average of 6.6%. The banking regulator has acknowledged that the NIM is too high, given an average deposit rate of 2.4% but does not advocate for an interest rate peg as it will bring about rigidity in the financial system and may introduce unnecessary shadow banking. The immediate implication of this amendment has been a reduction of the net interest margin earned by banks.

The Managing Director (MD) of BANK X has engaged you as consultant to assist in developing risk mitigation strategies for the regulatory hurdle dealt. The MD recommends the following tactical strategies to the Capital team:

i. The bank's management maintains the same loan book growth trajectory (despite a shrink in the NIM), the same growth trajectory in non-funded income and the current level of operational efficiency
ii. The bank's management slows down on lending (due to a reduced NIM), increases their non-funded income growth and improves the operational efficiency
iii. The bank's management aggressively grows the loan book, increases their non-funded income growth and improves the operational efficiency

Required:

a) Citing other relevant examples, identify and explain the type of risk faced by Bank X? **(4 Marks)**

b) Calculate the total erosion in interest margins after the interest rate capping bill, in the entire banking industry given total deposits stood at KSh. 2.7 Trillion. **(6 marks)**

c) Recommend a tactical initiative Bank X should adopt clearly stating 5 assumptions made. **(10 marks)**

Question 3

a) Briefly highlight the contribution made by the various Basel accords and Kenyan Banks compliance status. **(4 marks)**

b) Distinguish between market and Credit risk measurement using the following concepts.

i. Sources of risk
ii. Distribution
iii. Time horizon
iv. Aggregation
v. Legal issues **(10 marks)**

c) Either by stating the formula or otherwise, explain the credit loss distribution model for measuring credit risk. **(2 marks)**

d) As an investor you decide to hold a portfolio of Kshs. 100m. The portfolio consists of A-rated bonds (Kshs. 40m) and the rest in BBB-rated bonds. You are advised that the one year probability probability of default for the A-rated bonds is 3% and for BBB-rated bonds is 5%. The assumption is also made that the bonds are independent. If the recovery value in the event of default is 70% and 45% for the A-rated and BBB-rated bonds respectively. What is the one year expected credit loss will you have from your portfolio? **(4 marks)**

Question 4

a) You would like everyone in your company to own up the risk management process. What key questions will you encourage every employee to consider for them to understand the risk management process? **(5 marks)**

b) What are the main components of Enterprise Risk Management in a firm? **(7 marks)**

You have been hired as a junior analyst at JJ Asset Managers. The Company wishes to launch unit trust scheme that will constitute of a Money Market Fund and an Equity Fund. The seed capital for each fund shall be Kshs 100 million. The Equity Portfolio Manager has tasked you to identify 7 stocks based on 2016 market performance which shall be invested on equal weighting. These stocks should rank the top 7 on risk-return basis sampled from the 26 most liquid stocks in the NSEASI index. The economic environment in 2016 is expected spill over to 2017 hence a repeat of stock performance is expected. (Assume risk free rate of 10%)

You have simulate the portfolio and report the following; The expected return of the portfolio; The 1 day VaR at 95% confidence interval and the 364-day VaR at 95% confidence interval.

c) You notice that there is a difference in portfolio VaR and the sum of individual stocks VaR. Explain. **(2 marks)**

d) Explain the advantages and limitations of using VaR. **(6 marks)**

<u>Question 5</u>

a) Using example of Bank B in Kenya, explain the risk measurement tools used by the bank. **(10 marks)**

b) Explain the key categories of Market risk faced by a commercial Bank. **(4 marks)**

c) Distinguish between Sensitivity analysis, scenario analysis and stress testing (**6 marks)**

END

GOOD LUCK