



Strathmore
UNIVERSITY

STRATHMORE BUSINESS SCHOOL
MASTER OF SCIENCE IN DEVELOPMENT FINANCE
END OF SEMESTER EXAMINATION
MDF 8105: FINANCIAL RISK MANAGEMENT

Date: Friday 8th April 2021

Time: 3 Hours

Instructions

1. Answer Question **ONE** and any other **TWO** Questions.
2. Marks will be awarded on the basis of clear exposition of your ideas, precision in the use of language and the validity of your logic.
3. Where relevant, show all your workings on the answer sheet provided.

Question 1 (Compulsory) (30 Marks)

Question 1A (20 Marks)

Below are solutions to questions and statements that some of your colleagues wrote down, as what they had learned, during the various sessions of the financial risk management class. Some are correct and others incorrect

Required

- i. Justify the correct ones**
- ii. Revise the incorrect ones**

1. **Risk capacity** describes the minimum amount of risk a firm can absorb in terms of Earnings, capital requirement and **Risk appetite** describes the amount and types of risk a firm is willing to tolerate in terms of meeting its objectives **(2 marks)**
2. If Kes 500 m is invested in a stock and the annual standard deviation of the rate of return is 25% which translates into a standard deviation of 1.6 % per day and the returns are normally distributes, a 1-day VAR at 99% confidence level is Kes 250,000 **(2 marks)**
3. An economic bubble is a situation where prices of a product or asset rise excessively and exceeds the product's real value. It bursts when demand is out strips supply **(1 mark)**
4. A key benefit that the firm will likely attain after establishing an ERM framework is allowing the company to determine and make use of a higher risk appetite **(2 marks)**

5. Compare equity beta, not asset beta with the market **(1 mark)**
6. Using CAPM, the cost of equity capital for a company in this industry with a debt-to-equity ratio of 0.01, asset beta of 2.27, a marginal tax rate of 23%, equity risk premium is 7% and risk-free rate of 5.25 is closest to 24% **(3 marks)**
7. Market portfolio is always 1. Systematic and unsystematic risk= total risk. **(1 mark)**
8. Why firms should manage risk. To reduce bankruptcy cost. Risk management increases the value of the firm by reducing the probability of tax default **(1 mark)**
9. Bank X lends Company Y Kes. 2,000,000 and Company Y defaults with Kes. 1,400,000. However, Bank X can recover up to Kes. 900,000 in asset collateral and the net loss is Kes 400,000. The expected loss, at a probability of default of 50% is approximately, Kes 250,000 **(3 marks)**
10. Treasury Bills issued by the government are credit risk free as they are backed by the government and are not subjected to any other risks **(2 marks)**
11. The question that relates to governance and policies when applying the enterprise risk management framework is 'How well do we manage the risks?' **(2 marks)**

Question 1B (10 Marks)

Arriving at an estimated beta for publicly traded companies is generally not a problem because of accessibility of stock return data, the ease of use of estimating beta using simple regression and the availability of estimated betas on publicly traded companies from financial analysis vendors. The challenge is to estimate a beta for a company that is not publicly traded or estimate a beta for a project that is not the average or typical project of a publicly traded company.

XYZ is a publicly traded company. Given that Company XYZ has an equity beta of 1.5, debt to equity ratio of 0.4 and tax rate of 30%.

Required

- i. Briefly explain how you would estimate the equity beta of a not publicly traded company and/or a project that is not typical of a publicly traded company **(3 marks)**
- ii. Calculate the asset beta of Company XYZ **(2 marks)**
- iii. Interpret the values of equity beta (1.5) and asset beta (calculated in ii) of Company XYZ **(2 marks)**
- iv. Critique the use of Capital Asset Pricing Model (CAPM) as a model of managing risk in appraising projects in Company XYZ **(3 marks)**

Question 2 (15 Marks)

Corporate failures in the early 1990's led corporate governance bodies and standard setters around the world prescribing guidelines for enterprise-wide risk management. With all this progress in risk management, during the global financial crises of 2007-2008, the world's leading financial services firms, their regulators, their auditors, and their rating agencies were so wrong in their assessment of the inherent risks in the subprime mortgage market.

Required

- a) Highlight TWO major global financial disasters whose genesis differ, and the lessons learned **(5 marks)**
- b) Explain FOUR credit risks inherent in a financial enterprise of your choice **(4 marks)**
- c) Describe THREE typical data types, for a financial enterprise, from which you can draw predictor variables to model default **(6 marks)**

Question 3 (15 Marks)

- A) An increase in the probability of default risk can have a dramatic impact on the business of a Micro- Enterprise (ME). The ME must control its risks with extreme care. It must make sure there is little probability that it will lose customers because of credit risk.

In such circumstances, the ME may find Value at Risk (VAR), a better measure of risk than portfolio theory

Required

- i. Explain in detail the term, Value at Risk (use an illustration) **(4 marks)**
 - ii. Compare and contrast the use of VAR and Portfolio theory as measures of risk **(8 marks)**
- B) A Micro- Enterprise has projected a 40% probability of default for its Kshs.10 million unsecured loan portfolio designated as digital loans. The current outstanding loan balances is at Kshs.600 million. The expected recovery rate is estimated at 48%.

Required

Calculate the expected loss of the loan portfolio and comment on the result. **(3 marks)**

Question 4 (15 Marks)

Risk management can be an influential process driving strategic planning and resource allocation as opposed to a mere compliance exercise. As chief risk officer of Kenya Power Lighting Company you are tasked with implementing an enterprise risk management (ERM) process. The BOD asks you to write a brief on ERM.

Required

In the brief

- a) Differentiate between ERM and Internal control **(4 marks)**

- b) Briefly, explain the advantages of implementing ERM process at KPLC (4 marks)
- c) Explain the first steps that you will undertake to identify risks at KPLC (4 marks)
- d) Prepare a risk profile of KPLC's potential top *five* risks (3 marks)

Question 5 (15 Marks)

You are a risk manager of Company ABC. The chief risk officer (CRO) is planning to conduct a risk management workshop and asks you to prepare a presentation on the *importance* of some aspects of risk management.

Required

Prepare the presentation based on the following

- i. Setting a risk appetite and risk tolerance levels (4 marks)
- ii. Applying stress testing and reverse stress testing in risk management (4 marks)
- iii. Computing the expected loss and expected shortfall (4 marks)
- iv. Using forward contracts and a futures contract to hedge risks (3 marks)