



**STRATHMORE UNIVERSITY BUSINESS SCHOOL  
BACHELOR OF FINANCIAL SERVICES  
BNK 4101: TREASURY AND RISK MANAGEMENT  
END OF SEMESTER EXAMINATION**

**Date:** Wednesday, 2<sup>nd</sup> August 2023

**Time: 2 Hours**

**Instructions**

- **Answer Question ONE (COMPULSORY) and any other TWO questions.**

**QUESTION ONE**

**(TOTAL 30 MARKS)**

- a) The treasury department plays a vital and indispensable role within a bank. Evaluate the importance of the treasury department in risk management within a bank. **(7 Marks)**
- b) ACB bank is a financial institution that provides banking and financial services to clients around the world. ACB bank operates in multiple countries and deals with various currencies, which exposes it to currency risk. The exchange rate fluctuation can significantly impact bank's profitability and balance sheet. To protect itself from adverse currency movement, ACB bank decides to implement a currency risk hedging strategy using derivatives.
- c) **Required:** As a treasury and risk management expert, suggest five hedging strategies available to the bank. **(8 Marks)**
- d) Explain the concept of bond duration and its significance in managing fixed income securities. **(5 Marks)**
- e) Zahara recently received a significant inheritance from her grandmother. She is considering investing a portion of her funds in bonds as a way to generate stable income and preserve capital. Zahara is risk-averse and prefers a conservative investment approach. Zahara understands that the state of the economy can affect bond returns. She has done some research and gathered information about two semi-annual bonds as reported below:

**Bond A:** FXD 2/2022/5

Face value: \$1,000

Coupon rate: 5%

Maturity: 5 years

Yield-to-maturity (YTM): 6%

**Bond B:** FXD 2/2022/7

Face value: \$1,500

Coupon rate: 5%

Maturity: 7 years

Yield-to-maturity (YTM): 7%

**Required:** Which bond should Zahara avoid and why?

**(10 Marks)**

**QUESTION TWO****(TOTAL 20 MARKS)**

- a) Eco bank is a prominent financial institution that operates in a highly dynamic and volatile interest rate environment. As part of its operations, the bank holds a significant portfolio of fixed-rate assets, such as loans and bonds, which exposes it to interest rate risk. To manage this risk and protect its financial position, Eco bank decides to implement an interest rate risk hedging strategy using derivatives.

**Required:** As a treasury expert and risk management expert, highlight three approaches for estimating interest rate risk exposure? Please provide an explanation of each approach and how it can be beneficial. **(7 Marks)**

- b) Assess the role and responsibilities of an Asset Liability Committee (ALCO) in a bank treasury department. **(5 Marks)**
- c) You are analysing two stocks, Company A and Company B, for potential investment. Historical data for both stocks and the market index are provided.

**Historical Data for five-year period:**

- ✓ Stock Returns (Company A): 8%, 6%, 5%, 10%, -2%
- ✓ Stock Returns (Company B): 5%, 7%, 9%, 3%, 6%
- ✓ Market Returns (Market Index): 4%, 6%, 7%, 5%, 3%

**Required:**

Using the data, estimate the beta for each stock and interpret the results.

**(8 Marks)****QUESTION THREE****(TOTAL 20 MARKS)**

- a) In the context of the global financial system, explain the differences between the fixed income market, equities market and forex market using examples. **(4 Marks)**

- b) ABC bank is a multinational company with a dedicated treasury department responsible for managing the company's investments in equities. The treasury team aims to maximize returns while ensuring the preservation of capital. However, they face several risks inherent in investing in equities.

**Required:** As a treasury expert and risk management expert, highlight four approaches for estimating equity risk exposure? **(6 Marks)**

- c) Coop bank is considering investing in a portfolio of corporate bonds paying coupon once in a year. The treasury department wants to assess the potential impact of various economic scenarios on the bond portfolio's performance. Perform a scenario analysis to evaluate the portfolio's sensitivity to interest rate changes and credit rating downgrade.

**Bond 1: FXD 1/2022/3**

Face value: \$1,000

Coupon rate: 5%

Maturity: 3 years

Yield-to-maturity (YTM): 4%

**Bond 2: FXD 1/2022/5**

Face value: \$1,500

Coupon rate: 6%  
Maturity: 5 years  
Yield-to-maturity (YTM): 3.5%

*Scenario 1: Interest rate increase: Assume a sudden increase in interest rates by 0.5%.*

*Scenario 2: Credit Rating Downgrade, resulting in increased YTM by 1%.*

**Required:** Based on the above, which bond should Coop bank avoid and why? **(10 Marks)**

**QUESTION FOUR** **(TOTAL 20 MARKS)**

- a) Explain the significance of stress testing in assessing the resilience of fixed income portfolio against adverse market conditions. **(5 Marks)**
- b) Banks treasury department plays a critical role in managing various risks to ensure the institution's stability, profitability, and compliance with regulations. Implementing a robust risk management process is essential to address potential vulnerabilities and uncertainties. **Required:** Discuss the steps involved in developing robust risk management process using examples. **(8 Marks)**
- c) Illustrate how coupon rate, maturity influence a bond's duration and its sensitivity to changes in interest rates. **(7 Marks)**

**QUESTION FIVE** **(TOTAL 20 MARKS)**

- a) ABS Bank is a prominent financial institution that is exposed to equity risks due to its investment activities, including equity holdings and equity-linked products. Stock price volatility can impact the bank's investment portfolio and financial performance. **Required:** Discuss the four strategies available to ABS bank to manage equity risk exposure using examples. **(8 Marks)**
- b) Explain the concept of direct and indirect quotation in foreign exchange rates. Provide examples to illustrate how they are used in currency exchange transactions. **(3 Marks)**
- c) Critique the three main theories of exchange rates determination using examples **(9 Marks)**