



Strathmore
UNIVERSITY

STRATHMORE INSTITUTE OF MATHEMATICAL SCIENCES
BACHELOR OF BUSINESS SCIENCE IN FINANCIAL ENGINEERING, FINANCIAL
ECONOMICS AND ACTUARIAL SCIENCE
SPECIAL EXAMINATION
BSF 4234 ADVANCED PORTFOLIO MANAGEMENT

DATE: 3rd APRIL 2024

Time: 2 Hours

QUESTION 1 (30 MARKS)

1. You are a portfolio manager, and your new client is a recently retired couple, both aged 65, with Kes 3 million to invest. The couple needs Kes 180,000 every year for living costs and the couple hopes to live for another 30 years. Their main goal is to make sure they don't lose money, maintaining a steady income stream over the next 30 years, and insist on maintaining at least 75% of their initial investment. They also want to leave Kes 500,000 for their kids. They don't like high-risk investments but are okay with a little risk if it means their money can grow significantly. They're also worried about rising costs due to inflation, which is estimated at 3% p.a.
 - a. Explicitly state the clients' primary and secondary objectives, highlighting any complexities brought by their specified needs. (4 marks)
 - b. Discuss the various constraints the couple faces, considering their need for annual inflation-adjusted withdrawals and legacy aspirations. (8 marks)
 - i. Liquidity
 - ii. Time horizon
 - iii. Tax considerations
 - iv. Unique circumstances
 - c. What type of risk profile do your clients have? (4 marks)

- d. What portfolio management and asset allocation strategies best align with your clients' needs and risk profile? Explain (6 marks)
- e. Explain the importance of portfolio monitoring and rebalancing. Suggest 3 scenarios that would trigger a rebalancing of their portfolio (8 marks)

QUESTION 2 (20 MARKS)

1. Discuss the role of alternative investments in portfolio management, and provide examples of alternative investments. (6 Marks)
2. Discuss the role of behavioral finance in portfolio management, and provide examples of common behavioral biases that can impact investment decisions. (10 Marks)
3. Explain the concept of dynamic asset allocation, and discuss its advantages and disadvantages. (4 Marks)

QUESTION 3 (20 MARKS)

1. The portfolio management process is an integrated set of steps undertaken in a consistent manner to create and maintain an appropriate portfolio (combination of assets) to meet clients' stated goals. Evaluate the portfolio management process (9 Marks)
2. Discuss the application of CAPM in portfolio management. (6 marks)
3. Discuss the concept of factor investing and how it differs from traditional active management. (5 Marks)

QUESTION 4 (20 MARKS)

1. You are an African Markets Equity Analyst and have been asked to prepare a fundamental analysis of one of the companies you will cover. Explain any 3 of the quantitative factors that you would investigate. (6 marks)
2. The common types of benchmarks in common use are: absolute return, manager universes, broad market indexes, style indexes, factor-model-based, returns-based, and custom security-based. A custom security-based benchmark should meet all fundamental and quality-based benchmark criteria. Explain 2 characteristics of a good benchmark. (4 Marks)

3. An analyst estimates that the expected return on the stock in the following table is 11 percent. Using a two-factor model, calculate the stock's return if the company-specific surprise for the year is 3 percent. (5 marks)

Variable	Expected Value	Actual Value	Sensitivity
Interest rates	0.0%	2.0%	-1.5
GDP	1.0%	4.0%	2.0

4. Explain the role of machine learning and artificial intelligence in portfolio management, and provide examples of how these technologies are being used in the industry. (5 Marks)

QUESTION 5 (20 MARKS)

1. Explain the difference between top-down and bottom-up investment approaches, and discuss the advantages and disadvantages of each. (6 Marks)
2. Clients' needs and circumstances change, and portfolio managers must respond to these changes to ensure that the portfolio reflects those changes. Discuss 2 other benefits that are realized by portfolio rebalancing. (4 Marks)
3. Differentiate between the following styles of investment
 - a. Social Responsible investing
 - b. Contrarian Investing. (4 marks)
4. Active managers attempt to "beat the market" by forming portfolios capable of producing actual returns that exceed risk-adjusted expected returns. The difference between the actual and expected return is often called the portfolio's alpha, and it represents the amount of value that the active manager has added. Examine 3 major reasons why a fund sponsor would prefer an active management approach over a passive one. (6 marks)