



Strathmore
UNIVERSITY

INSTITUTE OF MATHEMATICAL SCIENCES
BBS FINANCIAL ECONOMICS
END OF SEMESTER EXAMINATION
BSE 4122 BEHAVIORAL FINANCE
EXAM

DATE: 22nd July 2019

Time: 2 Hours

Instructions

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

Question 1

a) Distinguish between the following terms/concepts

- i. Risk aversion and loss aversion (5 marks)
- ii. Value and growth stocks (5 marks)
- iii. Autonomic and cognitive heuristics (5 marks)

b) Consider an individual with the following value function under prospect theory:

$$v(z) = z^{0.88}, \text{ when } z > 0$$

$$v(z) = -2(-z)^{0.88}, \text{ when } z < 0$$

The individual has the following weighting function:

$$\pi(p) = p^\gamma / (p^\gamma + (1-p)^\gamma)^{1/\gamma}$$

Where γ is set at 0.65.

Choose between:

A (0.8, Ksh50, Ksh0) and B (0.4, Ksh100, Ksh0)

C (0.00002, Ksh500,000, Ksh0) and D (0.00001, Ksh1,000,000, Ksh0)

- i. Determine which of the above prospects will be preferred by the individual according to prospect theory. (7 marks)
- ii. Explain whether or not these choices are consistent with expected utility theory. (3 marks)

- c) Arbitrage is limited because the wealth of arbitrageurs is limited. Discuss this statement in the context of those who are managing their own money and those who are managing other people's money. **(5 marks)**

(TOTAL: 30 MARKS)

Question 2

- a) Explain how present bias and hyperbolic discounting act to deter people from saving enough to pay for their pensions in retirement. **(9 marks)**
- b) Using prospect theory, explain disposition effect in the stock market. **(5 marks)**
- c) Explain two alternative explanations for the behavior which is usually attributed to the disposition effect. **(6 marks)**

(TOTAL: 20 MARKS)

Question 3

- a) Explain the three supports on which market efficiency rests. Why is it that only one of them is required? **(5 marks)**
- b) Some aspects of stock price behavior are both baffling and potentially hard to reconcile with market efficiency. Researchers call these market anomalies. Discuss three stock market anomalies and provide behavioral finance explanations of these anomalies. **(15 marks)**

(TOTAL: 20 MARKS)

Question 4

- a) Investment activity is driven by both rational value-maximization and behavioral influences on the part of managers. Discuss. **(10 marks)**
- b) In a regression of perceived long-term investment value (LTIV) on size (S), book to market (B/M), and management quality (MQ), the following coefficients (all significant) were estimated:

$$\text{LTIV} = -0.86 + 0.15\log(S) + -0.11\log(B/M) + 0.85MQ$$

Discuss what can be learned from this regression (which appears in Shefrin, H., and M. Statman, 1995, "Making sense of beta, size, and book-to-market," *Journal of Portfolio Management* 21 (no. 2), 26-34). **(5 marks)**

- c) Discuss prospect theory given by Kahneman and Tversky and its implications regarding the financial behaviour of investors. **(5 marks)**

(TOTAL: 20 MARKS)

Question 5

- a) The probability of breast cancer is 1% for a woman at age forty who participates in routine screening (base-rate). If a woman has breast cancer, the probability is 80% that she will get a positive mammography (hit-rate). If a woman does not have breast cancer, the probability is 9.6% that she will also get a positive mammography (false-alarm rate). A woman in this age group had a positive mammography in a routine screening.

Calculate the statistical probability that she actually has breast cancer. **(5 marks)**

- b) In a study by Eddy (1982) titled “*Probabilistic reasoning in clinical medicine: Problems and opportunities*”, less than 5% of the respondents gave answers that conformed to the Bayesian solution. Discuss four biases that people are subject to when they compute Bayesian law.

(8 marks)

- c) Consider two investors (Ann and Ben) with the following demand curves for a stock:

$$\text{Ann: } p = 200 - q$$

$$\text{Ben: } p = 150 - 2q$$

Determine which of these investors is more overconfident assuming the current market price of the stock is Ksh 50 and this price is expected to fall to Ksh30 in the next few days.

(7 marks)

(TOTAL: 20 MARKS)