Strathmore
UNIVERSITY

STRATHMORE INSTITUTE OF MATHEMATICAL SCIENCES

BBS FINANCIAL ECONOMICS

END OF SEMESTER EXAMINATION

BSE 4122 BEHAVIORAL FINANCE

DATE: 16th September 2021 Time: 2 Hours

Instructions

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

Question 1

a) Discuss the following biases and give one concrete example of financial errors that may result from each bias. **(8 marks)**

i. Hot hand fallacy

ii. Ambiguity aversion

iii. Gambler's Fallacy

iv. Anchoring Bias

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

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

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

The individual has the following weighting function:

$$(pr) = \frac{pr^{\gamma}}{(pr^{\gamma}+(1-pr)^{\gamma})^{1/\gamma}},$$

where $\gamma = 0.65$.

Choose between:

A (0.8, Ksh100, Ksh0) and B (0.4, Ksh200, Ksh0)

C (0.00002, Ksh1,000,000, Ksh0) and D (0.00001,Ksh2,000,000, 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. **(4 marks)**

c) Some aspects of stock price behavior are both baffling and potentially hard to reconcile with market efficiency. Researchers call these market anomalies.

i. Name and briefly describe 5 calendar anomalies. **(5 marks)**

ii. "Calendar anomalies are at odds with semi-strong market efficiency." Discuss! **(6 marks)**

(TOTAL 30 MARKS)

Question 2

a) Odean [1998] uses Prospect Theory [along with other behavioral phenomena] to explain the disposition effect, the higher propensity of investors to realize winner stocks than loser stocks. Provide three arguments why the disposition effect may be considered suboptimal behavior from the standard economic point of view. **(6 marks)**

b) The following table shows the composition of Edgar's portfolio as of 1 January 2021 along with information about the average purchase price for each stock holding.

Table 1 Edgar's portfolio as of 1 January 2021

Stock	No of stocks	Average purchase price
Q	120	80
R	30	100
S	23	50
T	34	12
U	100	60

Since the beginning of 2021 Edgar has actively traded in five different stocks: Q, R, S, T and U. On 15 February he sold 5 S-shares. On 4 April he sold 10 Q-shares. On 20 May he sold all of his T shares.

Table 2 shows the price movements of Q, R, S, T, and U shares during 2021:

Day	Q-share	R-share	S-share	T-share	U-share
15-February	Ksh110	Ksh120	Ksh52	Ksh27	Ksh9
04-April	Ksh70	Ksh80	Ksh57	Ksh40	Ksh15
20-May	Ksh120	Ksh25	Ksh60	Ksh47	Ksh15

Calculate the disposition effect for Edgar for the period from 1 January 2021 till now. Use the same method as Odean (1998) in his main analysis and the average purchase price as reference point. **(8 marks)**

c) Describe three mistakes surrounding retirement and pensions and give behavioral explanations for each of them. **(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? **(6 marks)**

b) Behavioural finance recognises that investors are subject to biases and heuristics when making investment decisions. Define and discuss the concepts used in the models proposed by Daniel, Hirshleifer & Subrahmanyam (DHS, 1998) and Barberis, Shleifer & Vishny (BSV, 1998). **(14 marks)**

(TOTAL 20 MARKS)

Question 4

a) Critics of behavioural finance argue that any effect an irrational investor might have on stock price behaviour will be eliminated by the activities of rational arbitrageurs. Is this actually the case? **(6 marks)**

b) In behavioural corporate finance researchers are investigating the potential impact of irrationality in financial markets on corporate decisions. Discuss how managers might exploit irrational markets when making investment and financing decisions. Assume that the rational manager acts within non-rational markets. **(12 marks)**

(TOTAL 20 MARKS)

Question 5

a) Prospect Theory was developed by Kahneman and Tversky as an descriptive alternative to expected utility theory. In Prospect Theory the value of a prospect is typically determined using the following function:

$$v(z)=\begin{cases} z^{\alpha},\ 0<\alpha<1 \ \ if\ z\geq 0 \\ -\lambda(-z)^{\beta},\ \lambda>1,\ \ if\ \ z<0 \end{cases},\ \pi(pr)=\frac{pr^{\gamma}}{\left(pr^{\gamma}+(1-pr)^{\gamma}\right)^{\frac{1}{\gamma}}}.$$

Briefly define and describe the parameters $\pi(pr)$, λ and α. **(6 marks)**

b) According to corporate finance theory an ongoing capital investment project should be terminated as soon as the net present value of the project's continuation becomes negative. However, in practice managers can be reluctant to terminate a losing project. Behavioral corporate finance provides an explanation for this reluctance. Describe this behavioral explanation based on behavioural concepts. **(8 marks)**

c) Overconfidence is a behavioral bias that is especially dangerous in a financial market. Discuss three potential drivers of overconfidence while providing concise and clear examples of retail investor behaviour that may [partly] be explained by each driver.

(6 marks)

(TOTAL 20 MARKS)