ZCAS University

Behavioural Finance

BBF 2232

Mid Semester Test

Tuesday 17th October 2023

16:30 to 19:30

TIME ALLOWED: THREE HOURS (plus 5 minutes to read through the paper)

INSTRUCTIONS:

1. Section A: this question is compulsory and must be attempted.

2. Sections B: Answer Three (3) questions from this section.

3. This question paper carries a total of 100 marks.

4. Candidates must not turn this page until the invigilator tells them to do so.

SECTION A: Question 1 is compulsory and must be attempted

Question 1

Given the gloomy outlook for the automobile industry in 2008, several hedge funds decided to sell Volkswagen (VW) shares short in the expectation of buying them back at a lower price. Then in a surprise announcement Porsche revealed that it had effectively gained control of 74% of VW's shares. Since a further 20% was held by the state of Lower Saxony, there was not enough stock available for the short sellers to buy back. As they scrambled to cover their positions, the price of VW stock rose in just two days from €209 to a high of €1005, making VW the most highly valued company in the world.

Required:

i. Describe the type of risk that best fits the case above. (4 marks)

ii. Illustrate using a graph the difference between the fundamental value and share price of VW shares. (6 marks)

iii. Discuss *three* (3) other risks that limit arbitrage. (9 marks)

iv. Discuss *three* (3) anomalies that are used as evidence of limits to arbitrage. Use practical examples. (12 marks)

v. Explain professional arbitrage and why the agency relationship is a limit to arbitrage. (4 marks)

vi. Suppose there were no limits to arbitrage. Give *one* (1) other reason why markets would still be inefficient. (5 marks)

(Total: 40 marks)

SECTION B: Attempt any THREE questions in this section

Question 2

a. Efficient Markets rely upon the principle that share prices follow a random walk, explain what this means (3 marks)

b. Define the Efficient Market Hypothesis with reference to the three forms. (9 marks)

c. Briefly explain *four* (4) anomalies that contradict the efficient market hypothesis. (8 marks)

(Total: 20 marks)

Question 3

An analysis of 60 monthly rates of return on JCK common stock indicates a beta of 1.5. Over the last month the equity market is up 5% and JCK is up 7%, the risk-free rate for 1 month is 0.5%.

Required:

i. Compute the equilibrium return on JCK over the last month. (4 marks)

ii. Give *two* (2) potential reasons for the actual return on JCK being different to the equilibrium return. (4 marks)

iii. The chief executive of JCK had dinner with a partner of a large investment bank, the next day JCK's share price dropped by 5% despite no new news being released to the public. Discuss this event with reference to the efficient market hypothesis. (4 marks)

iv. Describe *three* (3) cases of insider trading that have occurred in the history of financial markets. (6 marks)

v. Advise the chief executive of JCK on the consequences of insider trading. (2 marks)

(Total: 20 marks)

Question 4

Consider the following information about a value function v (x):

If v (+2) = 5, then v(-2) = ?

If v(-3) = -16, then v(+3) = ?

If v (+4) = 10, then v(-4) = ?

If v(-5) = -22, then v (+5) = ?

<u>Required:</u>

i. Define prospect theory and explain *three* (3) assumptions that support the theory. (10 marks)

ii. Fill in the missing information and draw a value function. (10 marks)

(Total: 20 marks)

Question 5

Imagine that you have invested in two stocks CMK & KKK. You currently own 1,000 shares of each stock.

	Stock CMK	Stock KKK
	K	K
Purchase price in 2020	10	20
Current price in 2023	15	15
Expected price in 2025	25	25
Sale proceeds if sold today	?	?
Gain or loss	?	?

<u>Required:</u>

i. Fill in the missing values. (4 marks)

ii. Which stock of the two would an average investor sell if the need arises and why? (5 marks)

iii. Discuss the behavior that explains the answer given in (ii). (5 marks)

iv. Give *three* (3) recommendations on how to cure the behavior exhibited by the average investor in (ii) above. (6 marks)

(Total: 20 marks)

End of mid-semester test!

FORMULAE SHEET

1. $E(R_{ei}) = R(R_i) = R_{Free} + [E(R_M) - R_{Free}] \beta_i$

2. $v(+x)$

3. $v(-x) = -2v(+x)$

4. *Proportion of Gains Realized (PGR)* $= \dfrac{no.\,of\,Realized\,Gains}{no.\,of\,Realized\,Gains + no.\,Paper\,Gains}$

5. *Proportion of Losses Realised (PLR)* $= \dfrac{no.\,of\,Realized\,Losses}{no.\,Realized\,Losses + no.\,of\,Paper\,Losses}$

6. $DE = PGR - PLR$