THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

This exam paper must not be removed from the venue

Venue _____

Seat Number _____

Student Number |__|__|__|__|__|__|__|__|

Family Name _____

First Name _____

School of Business
Semester Two Examinations, 2024
FINM3407 Behavioural Finance

This paper is for St Lucia Campus students.

Examination Duration: 120 minutes

Planning Time: 10 minutes

Exam Conditions:

•No written or printed material permitted
•Casio FX82 series or UQ approved and labelled calculator only
•During Planning Time - Students are encouraged to review and plan responses to the exam questions

Materials Permitted in the Exam Venue:
(No electronic aids are permitted e.g. laptops, phones)

None

Materials to be supplied to Students:
Additional exam materials (e.g. answer booklets, rough paper) will be provided upon request.

None

Instructions to Students:
If you believe there is missing or incorrect information impacting your ability to answer any question, please state this when writing your answer.

Please answer all questions directly in the spaces provided in this question booklet. Any work completed on rough paper will not be graded.

Total Marks: 50.

For Examiner Use Only

Question	Mark

Total _____

Total Marks: 50

Question 1

Using the DHS model, consider the following parameters:
- $\theta = 2$: This is the true value of the signal.
- $\sigma_\theta^2 = 2$: The variance of the signal.
- $\sigma_\varepsilon^2 = 3$: The variance of the noise.
- $\sigma_C^2 = 2$: The error variance for overconfident investors.
- $s_2 = 3$: This is the received signal.

A. Given that $s_2 = \theta + \epsilon$, determine the path of prices when overconfident investors set prices compared to the rational path of prices. **[2 marks]**

B. What does your answer in part (a) suggest? **[4 marks]**

C. How does the presence of overconfident investors impact the volatility of prices compared to a market with only rational investors? Analyse and discuss the implications for market efficiency. **[4 marks]**

Question 2

Tiffany is a hedge fund manager with a history of outstanding performance. For the past 10 years, Tiffany's fund has used an equity market neutral strategy (long/ short strategy that strives to eliminate market risk, i.e., beta should be zero) which has proved to be effective as a result of Tiffany's hard work. An equity market neutral strategy normally generates large daily trading volume and shifts in individual security positions. Tiffany's reputation has grown over the years as her fund has consistently beaten its benchmark. Employee turnover on Tiffany's team has been high; she has a tendency to be quick to blame, and rarely gives credit to team members for success. During the past twelve months, her fund has been significantly underperforming against its benchmark. One of Tiffany's junior analysts, Tang, is concerned about the underperformance and notes the following::
- **Observation 1:** Certain positions are significantly underwater with higher risk profiles and have been held for longer than normal.
- **Observation 2:** Trading volume has decreased by more than 40%.
- **Observation 3:** The portfolio is more concentrated in a few sectors.

Tang is worried that the portfolio may be in violation of the fund's Investment Policy Statement (IPS). Tang brings this to Tiffany's attention during a regular weekly team meeting. Tiffany dismisses Tang's analysis and tells the team not to worry because she knows what she is doing. Tiffany indicates that since she believes the pricing misalignment will correct itself, the portfolio will not be able to take advantage of the reversion to the mean if she sells certain

losing positions. She reassures the team that this strategy has performed well in the past and that the markets will revert, and the fund's returns will return to normal levels.

Tang tactfully suggests that the team review the fund's IPS together, and Tiffany interrupts him and reminds the team that she has memorised the IPS by heart. Tang contemplates his next step. He is concerned that Tiffany is displaying behavioural biases which are affecting the fund's performance.

    a. Identify and discuss the behavioural biases that Tiffany might be exhibiting. Provide examples from the case to support your analysis. **[3 marks]**

    b. How can herd behaviour among team members impact the decision-making process within Tiffany's fund, especially given her authoritative leadership style? **[4 marks]**

    c. Recommend strategies that Tang and the team could employ to address and mitigate the impact of Jordan's behavioural biases on the fund's performance. **[3 marks]**

Question 3

Momentum is the anomaly that gives those subscribing to efficient markets the most trouble.

    a. What cognitive biases might contribute to momentum in financial markets? **[3 marks]**

    b. How might these biases potentially create market inefficiencies that momentum strategies exploit? **[4 marks]**

    c. Are there any potential risks associated with relying solely on momentum as an investment strategy? **[3 marks]**

Question 4

Mike is a well-known energy industry analyst; he has worked in the energy industry for over 30 years and has won The Best Analyst Award multiple times, even though all of them were achieved when he just joined the industry. Mike recently came across a portfolio which heavily invested in an energy company, TheNexGreen. TheNexGreen is currently undergoing a new project, PowerBugs, in which they aim to develop a machine that will generate and store power using insects. When reading the report conducted by their head of R&D, Mike was excited and attracted to the novelty of PowerBugs, but he also noticed that the project was overdue with their target timelines. Nonetheless, it was mentioned in the conclusion that the R&D department has seen positive signs that PowerBugs is achievable. While Mike has never been directly involved in the R&D process and had difficulty understanding the scientific reports,

combining his past experience and the concluding statement, he feels reassured. Mike stated "Investing over 75% in TheNexGreen is a bit risky but I believe it is appropriate and a high return decision. What they are doing is innovative and very likely to succeed. Even if PowerBugs fails I will be able to use my superior knowledge of the energy industry to outperform the market".

    a. Identify the specific behavioural biases that Mike appears to be exhibiting in his evaluation of the PowerBugs project. Provide examples from the scenario to support your assessment of each bias. **[4 marks]**

    b. How might these biases lead Mike to make a suboptimal capital budgeting decision regarding investing in PowerBugs? **[6 marks]**

Question 5

In housing markets, there is a positive correlation between prices and trading volume. When there is a housing boom, many houses sell at, or even above, the prices asked by sellers. In times of bust, homes sit on the market for a long time with asking prices that exceed the prices that can reasonably be expected.

    a. During a housing boom, what behavioural factors contribute to the increase in both housing prices and trading volume? **[4 marks]**

    b. What market dynamics and buyer/seller behaviours lead to homes sitting on the market longer and asking prices exceeding reasonable expectations during a housing bust? **[4 marks]**

    c. How do buyer and seller behaviours differ during housing booms and busts? **[2 marks]**

END OF EXAMINATION