

Derivatives (M)

Individual Assignment (30%)

- Submit your assignment electronically via the Turnitin Assignment tool by **Wednesday 3rd November**. The link for the Turnitin Assignment tool has been created for you under the Assignment page on MyUni. You will need to upload a Word version of your assignment to Turnitin.
- Statement of Acknowledgement of Original Work
By submitting your assignment you declare that all material in this assessment is your own work. You have also read the [University's Academic Honesty Policy](#). Please be aware of policy and guidelines regarding plagiarism (see Course Outline for website link).
- While you are encouraged to make use of the Eikon access available to you for your individual research, it is a **requirement to use ONLY the data provided in the "Assignment Data"** file for this assignment.
- In your Semester 1, 2021 EVA assignment, you were required to conduct a fundamental analysis of a company and derive an intrinsic value for its shares. **Continuing with this stock, use ONLY the data file provided on MyUni under the 'Assignment' module to perform this assignment.**

Much attention has been given to meme stocks of late. While the phenomenon is not entirely new, individual investors on social media platforms the likes of reddit has sparked a resurgence with more meme stocks created. Yet, much of the volatility in the equities market has been attributed to increased interest in trading out of the money options. Options, as opposed to stocks, often present a cheaper and efficient way to get into the "action".

The volatility skew/smile of a stock option can offer insight into speculators' interest in the stock, thus providing valuable cues into often volatile price movements. Opportunities can be had with the myriad of option strategies available to take advantage of the potential price movements.

In this assignment, you would analyse the volatility skew of a stock to determine the directional bias and potential price swings (Part A). Armed with this information, determine an appropriate option strategy to capitalise on the opportunity presented (Part B). Compare your option strategy with the alternative of investing in the stock and hedging it with index futures (Part C).

Part A (10 marks)

From the implied volatility data across different strike prices provided for the period 1st January 2021 to 15th August 2021, determine the directional bias and potential price swings expected in the market. You are required to, at a minimum:

- select an appropriate delta to plot the put-call ratio for the period 1st January 2021 to 15th August 2021. Explain your choice of delta. (3 marks)

- analyze the put-call ratio graph to determine the market expectation for the period of 16th August – 30th August 2021. Explain your findings and how that lead to your conclusion of whether the market is likely to be bullish, bearish or neutral. (4 marks)
- plot the volatility skew or smile on the 16th August. Assuming the At-The-Money options (45 – Delta) are fairly valued, explain the implications of the volatility skew/smile and how that influence your choice of option strategy. (3 marks)

Part B (9 marks)

Based on your analysis in Part A, execute an option strategy for the period 16th August to 30th August 2021 to capitalise on the opportunity presented. You are required to, at a minimum:

- determine an option strategy appropriate to your analyses in Part A. Explain your choice of the strategy and its execution. (5 marks)
- tabulate and evaluate the performance of the strategy in terms of risk and return, and potential improvement. (4 marks)

Part C (9 marks)

Assume \$1,000,000 fully invested in the relevant stock on the 16th of August. Based on the market expectation determined in part A, implement a futures hedging strategy for the period 16th August to 30th August 2021. You are required to, at a minimum:

- implement the futures hedging strategy. Explain the strategy and its execution, and how that is appropriate to your analyses in Part A. (5 marks)
- tabulate and evaluate the performance of the strategy in terms of risk and return, and potential improvement. (4 marks)

Report writing and presentation (2 marks)

Your report must document a complete discussion of the process outlined above, including full details of transactions executed. Transaction costs must bear evidence that it is a realistic figure. Good structure, presentation and concise writing skills are likewise important. Your report length must have a minimum word count of 2,500 words (size 12 font, 1.5 spacing), including all discussion, graphs, tables and references.