Project, ELEC7082 Artificial Intelligence in Finance, 2023-24

Submission: Moodle https://moodle.hku.hk

Weight: This assignment accounts for 30% of the credit in the module**.**

Objective: Information Extraction from data

Imagine you are employed as a researcher by a fund management company which is involved in trading. Your task is to extract information from data to assess the risk and return in different markets.

Data:

For this assignment, I am providing you with an Excel Workbook (DailyClosing-SelectedIndices-2019to2023.xlsx). It contains a number of indices around the world. For simplicity and fairness, you should base your work on data in this workbook only.

Approach:

You may analyse risk measures under time series, such as standard deviation of log returns, VaR and Expected Shortfall (CvaR). You may also analyse risk measures under Directional Change, such as frequency of directional changes (NDC), magnitude of trends (TMV) or returns in individual trends.

You may focus on one index only. But it will be easier to score if you compare your findings from multiple indices. For example, does one market gives higher returns but lower in risk than another? Do any markets move together with each other?

You may also look at changes in the market over time. For example, does the market behave differently between 2019-22 and 2023?

The best way to approach the assignment is to assume that you are presenting your findings to your boss, with the hope that you will be asked to lead a team to further develop your ideas.

Submission Requirement:

1. **Executive Summary:** In this report, you should succinctly explain your major findings. Explain why it is useful for your company. The report should be within 150 words or one page, whichever is shorter (including figures and tables, but not including bibliography and appendices, if any). The report must be in either MS Word (preferred) or PDF format.
2. **Supporting material:** You may submit data, papers, web links, etc. to support your findings reported in the Executive Summary.

Assessment criteria:

Marks will reflect the quality of your findings and how well you substantiate and present your findings.

Deadline, assignment 3: Sunday 5th May 2024 12:00 (noon)