Brain Mind and Markets Lab

THE UNIVERSITY OF MELBOURNE | FACULTY OF BUSINESS & ECONOMICS

FNCE30010

Algorithmic Trading

Semester 2, 2020
Project 2 (Backtesting)
Report due on **11:59 pm on Friday, 30 October 2020**
Presentations schedule will be announced on Canvas.

Nitin Yadav and Peter Bossaerts
Brain, Mind & Markets Lab.
Department of Finance.
Faculty of Business and Economics.
The University of Melbourne.

Administrative Arrangements

Report due date:	**11:59 pm on Friday, 30 October 2019**
Late assignments:	Late submission assignments may attract a penalty unless an extension has been granted. All extension requests must be made prior to the assessment due date and supported with appropriate documentation. Unless an extension has been granted, penalties to the assessment will be applied. For assignments submitted after the due date, the mark awarded will be reduced by 10% for each day the work is late. For assignments submitted later than 5 working days after the due date will not be marked and will receive no marks.
Where to submit:	Assignment submission is via the LMS Assignment Submission link for all written assignments. Please refer to the LMS Student Guide: Turnitin Assignments for detailed submission instructions, if needed. **Only one member of the group has to upload** (see Group Size below).
Group size:	For undergraduates the maximum number in each group is 3. For postgraduates this is an individual assessment.
Submission Metadata:	You should include your details as part of your submission. **Subject Code and Name** **Student Numbers of all members in group** **Full Names** **Assignment Name**
Word limit:	Maximum of 3000 words (excluding Appendix).
Marks:	This assignment counts 40% towards the final mark in this subject.

The assignment must be your group's own work. Students are encouraged to discuss the assignment and to share information sources. However, the writing of each group's assignment must be conducted separately and independently.

Assignment Instructions

Background: You are hired on probation as an algorithmic trader in one of the top "Quant" firms. Your first task is to explore the trading strategies available in the public domain with the objective to improvise on it. If your manager is convinced that your improvised strategy has a reasonable (e.g., greater than 0.75) expected Sharpe ratio, she will allocate 100,000 AUD towards your strategy. Of course, if this would also mean that you get hired as a permanent employee and you get to run your own algorithms! Note that your manager has more than 25 years of experience in the trading/investment industry and she is only convinced by sound scientific arguments and evidence.

Assignment tasks:

(1) Select and describe the chosen trading strategy that is available publicly (e.g., mentioned in a research paper, book, blog, Quantopian, etc).

(2) Discuss potential weakness in the selected strategy, suggestions to improve on it ,and back test it. Note improvisation does not mean that you change the value of the parameters (e.g., changing the length of the short moving average from 5 to 3).

(3) Discuss the improvised strategy along with experimental results.

The bottom line is to convince your manager to include your strategy in her portfolio of algorithms!

Marks will be allocated as follows:

- 10 minute presentation: 10 marks
- Strategy description and improvisation: 10 marks
- Methodology and evaluation: 15 marks
- Writing style: 5 marks