

Assignment
Learning and Computational Intelligence in Economics and Finance (CF963-7-AU) 2013-2014
Set by Edward Tsang, University of Essex

1. Introduction:

This is an assignment on algorithmic trading. This assignment accounts for 30% of your total marks in this course. This assignment should be submitted electronically. The deadline of this assignment is *11:59:59am, Wednesday 11th December 2013*.

2. Objective:

The primary objective of this assignment is to assess your ability to (a) design algorithms for trading and (b) evaluate their effectiveness. Profitability is preferable, but you will mainly be assessed by whether you can describe your algorithm clearly and whether you can fairly evaluate your algorithm. A secondary objective is to familiarize you with the concept of “directional changes”. Therefore, your algorithm should make use of directional changes.

3. Given:

The spread sheet associated to this assignment contains closing prices of a number of indices. You may use any of them to test your algorithms; you don't have to use all of them unless you want to.

4. Your task:

Your task is to design an algorithm for trading in the indices that you have been provided. You should describe your algorithm precisely. You should also explain how you would evaluate the effectiveness of your algorithm. You must show clearly when your algorithm buys and sells, and what profit or loss it makes in each deal (you may put the details in the appendix).

Your algorithm should be based on the concept of directional changes. You may write your program in Matlab, Java, or Excel should that be sufficient.

5. Submission requirements:

You should submit electronically a report of no more than 500 words. You can include more information in an appendix if needed. Please also submit a spreadsheet or a program. If you write a Java program for this assignment, then please submit your executable code as well as the source codes.

6. Assessment criteria for this assignment:

In assessing your submission, I shall ask the following questions:

- How does the algorithm work? Exactly under what condition would it buy and sell?
- How did you evaluate the algorithm? What data did you use? What period?
- Have you supplied me with details on how the profits and losses were produced?
- How much money did the algorithm make or lose?

You should imagine that you are trying to convince your sponsors that this is an algorithm that they should invest in. For that purpose, everything must be explained clearly. You must also submit enough information for them to verify your results.

7. Please refer to the Student's handbook on the Departmental Policy on Plagiarism and Late Submission