

程序代写代做 CS编程辅导

Copyright © Copyright University of New South Wales 2022 All rights reserved.



Course materials copyright

UNSW Sydney owns copyright in the materials (unless stated otherwise). The material is subject to copyright under Australian law and under international treaties. The materials are provided for use by enrolled UNSW students only. No part, or any part, may not be copied, shared or distributed, in print or digitally, outside the course without permission. Students may only copy a reasonable portion of the material for personal research or study or for criticism or review. Under no circumstances may these materials be copied or reproduced for sale or commercial purposes without prior written permission of UNSW Sydney.

WeChat: cstutorcs

Statement on class recording

To ensure the free and open discussion of ideas, students may not record, by any means, classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the students own private use.

WARNING: Your failure to comply with these conditions may lead to disciplinary action, and may give rise to a civil action or a criminal offence under the law.

THE ABOVE INFORMATION MUST NOT BE REMOVED FROM THIS MATERIAL.

QQ: 749389476

<https://tutorcs.com>

Financial Econometrics, 2022 T2
Case Study Part I
(25% of the course mark)



1. This Part I of the assignment must be completed in a **group of 3 or 4 students**. Each group is identified by a date (e.g. Tue13) and a group number (e.g. Group 2).
2. Each group will be assigned a dataset for the project.
3. Each group must submit a copy of the assignment via Turnitin. Only one submission per group. Each group must select one person to submit the assignment.
4. **The online submission deadline is 5:00 pm on Monday 11 July, (WEEK 7).** Each group MUST submit the online copy to Turnitin.

The project Cover Sheet must be properly filled, which includes tutorial/group id, names and student numbers of the group members.

5. A late-submission penalty of 20% will apply for each 24 hours late.
6. All submissions will be checked for plagiarism. The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. Where it can be established that individual students are responsible for the plagiarism, those individual students will be penalized. However, where it is judged that the plagiarism should have been clear to the other group members, the penalty will apply to all members of the group.

UNSW Business School
School of Economics

程序代写代做 CS编程辅导



Econometrics, 2022 T2
Study Part I

Group Cover Sheet

Check-list

1. Choose one member to submit the assignment: one soft-copy to be submitted online.
2. Class number, group number, all names and student numbers of the group must be filled in on this Cover Sheet.

WeChat: cstutorcs

Assignment Project Exam Help

Class/Group ID:

Email: tutorcs@163.com

	Full Name	Student No.
1. (person for submission)	QQ: 749389476	
2.	https://tutorcs.com	
3.		
4.		

Software

You MUST use Python to complete this assignment. You must attach a copy of your codes with your submission.

Topics

This assessment requires material covered in the lectures of Week 1 to Week 4 inclusive.

Data



Select the company corresponding to your group (all these are large companies significant for superannuation funds, international share portfolios likely to hold most of these companies). The data allocation (company name) to groups can be seen in the Excel sheet: https://docs.google.com/spreadsheets/d/1shPrDABxrNuGEuz9Qp_SHRLKGj66rl9eDtG0aLOyFJU/edit?usp=sharing

Download open/close stock prices and volume information from <http://finance.yahoo.com> as described below.

Enter the company name in the window near GET QUOTES button.

Please, make sure that you download the information for the “main” stock of the company (not its derivative, or a non-US quote). See appendix for some example screen shots.

Once you are on the company page download historical prices by clicking on the corresponding link on the left-side menu.

Select the following data-period for your historical quotes:

16 June 2012 till the 17 of June 2022

Enter the date range and click on “download to spreadsheet” on the bottom of the page (see Appendix). You will receive a comma-delimited file opened by Excel. The data are sorted in descending date order. For the purpose of the analysis you need to re-sort the data in the **ascending date** order.

Note: Some companies may have shorter periods of data available. Possible reason: company changed its name or merged with another company. Investigate if this is the case and add the data on the predecessor. Talk to me if you have difficulties. If your company doesn't go back to 2012, go as far as you can. Similarly, if the data stops earlier than June 2022, that is fine. Just specify these sample restrictions at the description of the company with reasons if known.

REPORT

Write a report on the tasks below. Keep your answers short and to the point. Show the necessary information (the null of a test and the decision rule, derivation of analytical results, and only necessary Python output that is needed to answer the question). Make sure to provide comments on all of your results. Please keep the page numbers limited to 7 pages maximum.

Python codes are added as an appendix and are not counted in the pages limit.

Case Study (I) Description

程序代写代做 CS编程辅导

Suppose that you work as a financial advisor. Your client (bank) is interested in investing in a given share.



1. Give a short profile of its business and recent history (2-4 sentences).

(2 Points)

2. Transform daily (log) returns. Plot returns over time. Plot the histogram and obtain basic descriptive statistics. Discuss your findings.

(3 Points)

3. CAPM Model

- a) Estimate CAPM model for your company. Use S&P500 index returns as a proxy for the market portfolio. The data on the index are available from yahoo (you still need to transform them into log returns). As a proxy for interest rates use the rate of return on a three-month U.S. Treasury bill (short-term government-issued securities have virtually zero risk of default). The data are available from <https://fred.stlouisfed.org/series/DGS3MO>.

(3 Points)

Notes:

Dates when shares were traded may not fully coincide with the dates when TBills were traded. To match the dates use Excel's VLOOKUP function (make sure to use false option for range_lookup to disable approximate date match). Alternatively, you may use MS Access database.

- b) Test whether CAPM holds and interpret an estimate of β . If CAPM does not hold explain possible reasons and suggest possible solutions (you do not have to implement them). Assume that CAPM hold (at least approximately) and construct replication portfolio with S&P500 index and T-Bill. Compute the historical expected return and the variance of the portfolio and compare it to the variance of the share. Based on these findings advise your client whether investment in portfolio is a better option.

(3 Points)

- c) Check whether the CAPM model specification is stable under the COVID-19 period. You May use parameters/model stability tests like the CUSUM test. If you reject stability, re-estimate a post COVID-19 CAPM and comment on the COVID-19 market beta.

(3 Points)

4. APT Model

- a) Estimate and test an APT type pricing model using the Fama & French **three factor** model for your company stock. Data on the size/book-to-market factors can be downloaded from:

http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html#Research

In your report interpret the meaning of the factors beta, and what they represent in addition to the CAPM premium.

(3 Points)

- b) Investigate whether unexpected changes in oil prices, and currency exchange rate are sources of risk that pay premium on your company stock.

Hint: Data on oil price and currency exchange rates are also available from Yahoo Finance. Whether you include an exchange rate and which currency you want to consider depends on your company. If your company is domiciled in Australia and buys parts from China, changes in the AUD/YUAN exchange rate may impact profitability of the company and the return on investment.

(3 Points)

5. Model Selection

- a) Test for Unit root. Describe the Dickey-Fuller test (the null hypothesis and the alternative hypothesis) and the conclusion of the test.

(2 Points)

- b) If you do not reject the null of unit root, describe your strategy for transforming the series into stationarity. Note that you may have deterministic source of non-stationarity. For example a structural break around COVID-19 pandemic!

(2 Points)

- c) Fit an ARIMA(1,1) model to your company returns data. Obtain the standardized residuals from your model and investigate if there is any dependence structure left in the residuals.

Hint: To do this you can use BDS test (Brock, Dechert and Schienkman [1987](*)).

Explain why this test is appropriate and why this test is more informative than a test for zero correlation in the residuals series. Shortly explain the test, the null hypothesis and the outcomes. What conclusions do you reach?

(3 Points)

- In Python, you can find codes for implementing the BDS test in:

https://programtalk.com/vs2/python/12423/statsmodels/statsmodels/tsa/tests/test_bds.py

(*)Brock, Dechert, Scheinkman, and LeBaron, A test for independence based on the correlation dimension, Econometric Reviews, 15, 1996: 197-235.

- d) Derive and plot the impulse response function of the ARIMA model you have estimated in (c)

(3 Points)

程序代写代做 CS编程辅导

WeChat: cs_tutors

Assignment Project Exam Help

Email: tutors@163.com

QQ: 749389476

https://tutors.com

The screenshot shows the Yahoo Finance website interface. A large QR code is overlaid on the left side of the page, with a red circle around it. The QR code has a small logo in the center that says 'Tutor CS'. The website content includes various financial data, news articles, and a sidebar with navigation links. The text '程序代写代做 CS编程辅导' is written in large red characters across the top. Below the QR code, the text 'WeChat: cs_tutors' is displayed. Further down, 'Assignment Project Exam Help' and 'Email: tutors@163.com' are shown. At the bottom, 'QQ: 749389476' and 'https://tutors.com' are visible. The background shows the Yahoo Finance page with IBM stock information highlighted.

程序代写代做CS编程辅导

The screenshot shows the Yahoo Finance website for IBM. A large QR code is overlaid on the left side of the page. The page displays the current stock price of IBM as 121.73, up 2.85 (2.29%) on August 29. Below the price, there is a table of historical prices. The table has columns for Date, Open, High, Low, Close, Volume, and Adj. Close. The data spans from August 8, 2008, to August 29, 2008. A 'Download To Spreadsheet' link is visible at the bottom of the table.

DATE	OPEN	HIGH	LOW	CLOSE	VOLUME	ADJ. CLOSE
29-Aug-08	123.71	127.99	121.63	121.73	5,117,560	121.73
28-Aug-08	124.06	126.46	123.38	124.25	4,898,000	124.25
27-Aug-08	122.42	124.85	122.18	123.38	5,843,800	123.38
26-Aug-08	122.58	122.85	121.50	122.50	6,218,200	122.50
25-Aug-08	124.48	124.93	122.70	122.86	5,827,400	122.86
22-Aug-08	123.30	126.35	122.80	124.93	5,989,200	124.93
21-Aug-08	121.58	123.43	121.55	122.99	6,315,000	122.99
20-Aug-08	123.50	123.97	122.71	122.51	6,211,600	122.51
19-Aug-08	123.66	126.79	122.22	122.80	6,311,600	122.80
16-Aug-08	125.44	129.00	123.23	122.49	6,924,000	122.49
15-Aug-08	127.07	127.19	125.35	126.36	5,566,200	126.36
14-Aug-08	125.01	128.25	124.80	126.94	6,813,000	126.94
13-Aug-08	125.00	126.99	124.75	125.80	6,867,800	125.80
12-Aug-08	126.01	126.50	124.40	125.22	6,996,800	125.22
11-Aug-08	128.43	128.43	125.75	126.60	7,490,400	126.60
8-Aug-08	129.50	131.38	127.73	129.01	8,561,600	129.01

weChat: tutorcs
Assignment Project Exam Help
Email: tutorcs@163.com
QQ: 749389476
<https://tutorcs.com>