

# Information about project work for the course SF2943 “Time Series Analysis” spring term 2018

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## General information

The project work counts for 3 hp of the full 7.5 hp of the course. The project also gives opportunity to earn bonus points for the exam for this year’s instance of the course.

## Organization

The project work is to be done in groups of 3-5 students. For each group, an email with

- a group name
- names and email-addresses of all group members
- the name and email of a “group correspondent”

has to be sent to [anjaj@kth.se](mailto:anjaj@kth.se) latest Wednesday 28/3. The “group correspondent” is the person responsible for all correspondence between me (Anja) and the group. It is the duty of the group correspondent to spread all relevant information to all other members of his/her group.

The project consists of three parts:

1. Analysis of a non-financial time series
  - a) Analysis of a non-financial time series of your own choice.
  - b) Peer review of the analysis of another group.
2. Discussion of a research article (to be assigned) which makes use of time series analysis.
3. Analysis of financial time series with the help of Finance Lab software.

More information below under “Problems”.

## Schedule and deadlines

- Wednesday 28/3: Email with group information (see above) to anjaj@kth.se.
- Friday 30/3: Each group will (randomly) be assigned two research articles and can choose one of them for their project, Part 2. Also, each group will have another group assigned for the peer review part.
- Week 15: Peer review I: The groups which have been paired for peer review meet and discuss their ideas for Part 1 a). Each group should prepare a short, informal presentation of their data (like some graphs, etc.). The idea is to discuss how suitable the data is for analysis and which questions should be addressed.

The date, time and meeting place is to be determined by the participants. The scheduled time for this is estimated to be 1 hour.

- Friday 27/4: Each group sends Part 1 a) of their project (Analysis of a non-financial time series of your own choice) to all members of the other group in the peer review team.
- Week 18: Peer review II: The groups which have been paired for peer review meet and discuss their Part 1 a). Each group should prepare a short presentation of their results and each group should prepare comments based on the written report from 27/4. Comments from peer review should be taken into account for the final version of 1 a), to be handed in 7/5.

The date, time and meeting place is to be determined by the participants. The scheduled time for this is estimated to be 1 hour.

- Monday 7/5: Part 1 a) of the project report has to be sent to anjaj@kth.se.
- Wednesday 9/5, 15:00-17:00  
+ Monday 14/5, 8:00-10:00  
+ Wednesday 16/5, 15:00-17:00: Short (5-10 minutes) presentations of Part 1 a). Exact date for each group to be announced in week 18. Mandatory attendance for all group members on the day of their own presentation (that is for all 7-8 presentations during that session).
- Wednesday 16/5: The full project report has to be sent to anjaj@kth.se.

## Problems and instructions

1. Analysis of a non-financial time series
  - a) Pick a time-series of your own choice and analyze it with the help of the tools covered in the course. The length of the time series should be suitable for the analysis and it should not be a financial time series (i.e. no stock prices, exchange rates, ...), but more general economic time series (for example macroeconomic data) are allowed. You are not allowed to copy your analysis from another source. State how

(i.e., from which source) you retrieved the underlying data. If asked upon, the data has to be provided electronically.

Choose yourself which of the tools from the course are relevant for the time series and apply them for description and analysis of the time series. If reasonable, make a forecast for future values. Discuss how well your time series fits to model assumptions. You are free to use software and corresponding packages of your own choice. Please state precisely what you are using and what the specific function does.

This part should not exceed 2 pages, excluding figures and tables, in the template.

- b) Read through the preliminary report provided by your paired group (given to you latest 27/4) and discuss with them at the peer review meeting. Write a short report (about a half page in the template) about strength and weaknesses of the analysis, for example with respect to relevance, originality, accuracy of analysis, suitability of model assumptions, presentation, ...

2. Discussion of a research article (to be assigned) which makes use of time series analysis.

Each group will (randomly) be assigned two articles and can choose one of them for their analysis. All articles use linear time series methods in different fields of application. It is your task to read through and understand the article and then write a short summary of the findings of the article in your own words. In addition, write a short report about strength and weaknesses of the analysis, for example with respect to relevance, originality, accuracy of analysis, suitability of model assumptions, presentation, ...

This part should not exceed 2 pages in the template.

3. Analysis of financial time series with the help of Finance Lab.

This part of the project is based on Chapter 7 and can therefore only be attempted after 2/5. The link to this problem will be provided in week 17.

## Rules for pass/fail and bonus points

The project is graded as “pass” if each of the three parts above is accomplished at a level which shows that the basic principles of the course have been understood and can be applied to the data which was chosen and/or assigned.

Both for Part 1 a) and for Part 2 there can be 0, 1 or 2 bonus points awarded. Criteria are:

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| 1 bonus point | A solution which shows a thorough analysis of the presented data, good knowledge of relevant methods and consistent and comprehensible conclusions from the analysis. All results are presented in a clear and well-structured way. |
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2 bonus points In addition to the points mentioned under “1 bonus point”, the analysis shows qualified critical thinking, original ideas and a self-motivated study of relevant concepts, if necessary also beyond the course syllabus. The results are presented in an accurate, appealing and convincing way.

For part 1 b) 0 or 1 bonus points can be awarded. The criterium for 1 bonus point is that the peer review part shows a thorough understanding of the corresponding group’s analysis, gives detailed, specific and constructive feedback (i.e., can or actually has lead to an improvement of the project) and shows a critical reflection of the analysis. All statements are presented in a clear and well-structured way.

Any bonus points are only awarded if the project is graded as “pass”. If the deadline for the final report is missed, the project grade is “fail”. If the criteria for “pass” are not met, but if only a single part of the project report can be identified as being not sufficient, the group has the opportunity to hand in a revised report within one week.

## About group work

All members of a group will receive the same grade (pass/fail) for the project and the same number of bonus points. All members of a group are equally responsible for the group work and are obliged to equally contribute to it. At the end of the course, if a group member thinks that this principle did not apply to his/her group, please contact me at [anjaj@kth.se](mailto:anjaj@kth.se).