



Course and Examination Fact Sheet: Spring Semester 2022

8,314: Time Series Econometrics

ECTS credits: 4

Overview examination/s

(binding regulations see below)

Central - Written examination (70%, 90 mins.)

Examination time: inter-term break

Decentral - examination paper written at home (in groups - all given the same grades) (30%)

Examination time: term time

Attached courses

Timetable -- Language -- Lecturer

[8.314.1.00 Time Series Econometrics](#) -- Englisch -- [Fengler Matthias Reginald](#)

Course information

Course prerequisites

Knowledge of data analytics I.

Learning objectives

Students learn how to analyze, appropriately model and predict time series data.

Course content

The course offers an introduction to time series analysis with applications to macroeconomic and financial data.

The course is relevant for students planning to work professionally with economic time series data, such as macro-economic or financial data. The class covers the most important linear times series models, discusses their properties and estimation strategies.

Main Topics

1. Background and introduction to Time series modelling in the time domain.
2. Fundamental concepts in time series analysis
3. ARMA modelling, identification, estimation and forecasting
4. Non-stationary series, unit roots and testing for unit roots
5. Vector auto regressions, structural modelling and causality
6. Co-integration and error correction

Course structure and indications of the learning and teaching design

Weekly lecture with theoretical and practical problem sets.

Course literature

Reading Material

- Lecture notes
- Walter Enders, Applied Economic Time Series, Wiley, New York, 2nd edition 2004.
- Shumway, Robert H., Stoffer, David (2017): Time Series Analysis and Its Applications



Further Reading Material

- James D. Hamilton, Time Series Analysis, Princeton University Press, 1994.
- Brockwell and Davis , Introduction to Time Series and Forecasting, 2nd edition, Springer Texts in Statistics 2002

Additional course information

In the case of the President's Board having to implement new directives due to the SARS-CoV-2 pandemic in SpS2022, the course information listed above will be changed as follows:

- The course is conducted online via the platform zoom;
- The recordings of the course are available for 30 days;
- The lecturer informs via StudyNet or e-mail on the changed implementation modalities of the course; There are no changes necessary to the course information.

The examination information listed below would be changed as follows:

- The oral examination (for eligible exchange students) are conducted online and are not recorded.
- Otherwise there are no changes necessary to the examination information.

Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination time and form

Central - Written examination (70%, 90 mins.)

Examination time: inter-term break

Remark

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Examination-aid rule

Extended Closed Book

The use of aids is limited; any additional aids permitted are exhaustively listed under "Supplementary aids". Basically, the following is applicable:

- At such examinations, all the pocket calculators of the Texas Instruments TI-30 series and mono- or bilingual dictionaries (no subject-specific dictionaries) without hand-written notes are admissible. Any other pocket calculator models and any electronic dictionaries are inadmissible.
- In addition, any type of communication, as well as any electronic devices that can be programmed and are capable of communication such as notebooks, tablets, mobile telephones and others, are inadmissible.
- Students are themselves responsible for the procurement of examination aids.

Supplementary aids

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Examination languages

Question language: English

Answer language: English

2. Examination sub part (2/2)

Examination time and form

Decentral - examination paper written at home (in groups - all given the same grades) (30%)

Examination time: term time



Remark

Assignments (2-3 students collaborate)

Examination-aid rule

Term papers

Written work must be written without outside help according to the known citation standards, and a declaration of authorship must be attached, which is available as a template on the StudentWeb.

Documentation (quotations, bibliography, etc.) must be carried out universally and consistently according to the requirements of the chosen/specified citation standard such as e.g. APA or MLA.

The legal standard is recommended for legal work (cf. by way of example: FORSTMOSER, P., OGOREK R., SCHINDLER B., Juristisches Arbeiten: Eine Anleitung für Studierende (the latest edition in each case), or according to the recommendations of the Law School).

The reference sources of information (paraphrases, quotations, etc.) that has been taken over literally or in the sense of the original text must be integrated into the text in accordance with the requirements of the citation standard used. Informative and bibliographical notes must be included as footnotes (recommendations and standards e.g. in METZGER, C., Lern- und Arbeitsstrategien (latest edition)).

For all written work at the University of St.Gallen, the indication of page numbers is mandatory, regardless of the standard chosen. Where page numbers are missing in sources, the precise designation must be made differently: chapter or section title, section number, article, etc.

Supplementary aids

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Examination languages

Question language: English

Answer language: English

Examination content

The written exam (70%) will cover the following topics:

- Fundamental concepts in time series analysis
- ARMA modelling, identification, estimation and forecasting
- Non-stationary series, unit roots and testing for unit roots
- Vector auto regressions, structural modelling and Causality
- Co-integration and error correction.

The examination paper (30%) consists in a take-home group work on an assigned problem.

Examination relevant literature

All examination relevant literature will be published by end of term.

Mandatory Reading Material

- Lecture notes and assignments
- Walter Enders, Applied Economic Time Series, Wiley, New York, 2nd edition 2004.
- Shumway, Robert H., Stoffer, David (2017): Time Series Analysis and Its Applications

Further Reading Material

- James D. Hamilton, Time Series Analysis, Princeton University Press, 1994.
- Brockwell and Davis, Introduction to Time Series and Forecasting, 2nd edition, Springer Texts in Statistics 2002



Please note

Please note that only this fact sheet and the examination schedule published at the time of bidding are binding and takes precedence over other information, such as information on StudyNet (Canvas), on lecturers' websites and information in lectures etc.

Any references and links to third-party content within the fact sheet are only of a supplementary, informative nature and lie outside the area of responsibility of the University of St.Gallen.

Documents and materials are only relevant for central examinations if they are available by the end of the lecture period (CW21) at the latest. In the case of centrally organised mid-term examinations, the documents and materials up to CW 12 are relevant for testing.

Binding nature of the fact sheets:

- Course information as well as examination date (organised centrally/decentrally) and form of examination: from bidding start in CW 04 (Thursday, 27 January 2022);
- Examination information (regulations on aids, examination contents, examination literature) for decentralised examinations: in CW 12 (Monday, 21 March 2022);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 12 (Monday, 21 March 2022);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised examinations: two weeks before the end of the registration period in CW 15 (Monday, 11 April 2022).