



## Course and Examination Fact Sheet: Spring Semester 2020

### 8,314: Time Series Econometrics

ECTS credits: 4

#### Overview examination/s

(binding regulations see below)

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

Decentral - Group examination paper (all given the same grades) (30%)

#### Attached courses

Timetable -- Language -- Lecturer

[8,314,1.00 Time Series Econometrics](#) -- Englisch -- [Fengler Matthias](#)

#### Course information

##### Course prerequisites

Standard 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 in the time domain 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.

##### Course structure

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 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

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## Examination information

### Examination sub part/s

#### 1. Examination sub part (1/2)

##### Examination time and form

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

##### 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, PDAs, 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

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#### 2. Examination sub part (2/2)

##### Examination time and form

Decentral - Group examination paper (all given the same grades) (30%)

##### Remark

Assignment

##### Examination-aid rule

Term papers

- Term papers must be written without anyone else's help and in accordance with the known quotation standards, and they must contain a declaration of authorship.
- The documentation of sources (quotations, bibliography) has to be done throughout and consistently in accordance with the APA or MLA standards. The indications of the sources of information taken over verbatim or in paraphrase (quotations) must be integrated into the text in accordance with the precepts of the applicable quotation standard, while informative and bibliographical notes must be added as footnotes (recommendations and standards can be found, for example, in METZGER, C. (2017), Lern- und Arbeitsstrategien (12th ed., Cornelsen Schweiz).
- For any work written at the HSG, the indication of the page numbers both according to the MLA and the APA standard is never optional.
- Where there are no page numbers in sources, precise references must be provided in a different way: titles of chapters or



sections, section numbers, acts, scenes, verses, etc.

- For papers in law, the legal standard is recommended (by way of example, cf. FORSTMOSER, P., OGOREK R. et SCHINDLER B. (2018, Juristisches Arbeiten: Eine Anleitung für Studierende (6. Auflage), Zürich: Schulthess, or the recommendations of the Law School).

## Supplementary aids

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## Examination languages

Question language: English

Answer language: English

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## Examination content

- 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.

## Examination relevant literature

Lecture notes, assignments. All examination relevant literature will be published by end of May (CW21).

### Please note

Please note that this fact sheet alone is binding and has priority over any other information such as StudyNet (Canvas), personal databases or faculty members' websites and information provided in their lectures, etc.

Any possible references and links within the fact sheet to information provided by third parties are merely supplementary and informative in nature and are outside the University of St.Gallen's scope of responsibility and guarantee.

Documents and materials that have been submitted no later than the end of term time (CW21) are relevant to central examinations.

Binding nature of the fact sheet:

- Information about courses and examination time (central/decentral) and examination type starting from the beginning of the bidding on 23 January 2020
- Information about examinations (examination aid regulations, examination content, examination-relevant literature) for decentral examinations after the 4th semester week on 16 March 2020
- Information about examinations (examination aid regulations, examination content, examination-relevant literature) for central examinations as from the starting date for examination registration on 6 April 2020

Please consult the fact sheet again after these deadlines have expired.