

Econometrics: Time Series Analysis (F000676)

Course size *(nominal values; actual values may depend on programme)*

Credits 6.0

Study time 180 h

Course offerings and teaching methods in academic year 2024-2025

A (semester 1)

English

Gent

seminar

group work

lecture

Lecturers in academic year 2024-2025

Everaert, Gerdie

EB21

lecturer-in-charge

Offered in the following programmes in 2024-2025

crdts

offering

Master of Science in Teaching in Economics(main subject Economics)

6

A

Master of Science in Business Engineering(main subject Data Analytics)

6

A

Master of Science in Business Engineering (Double Degree)(main subject Data Analytics)

6

A

Master of Science in Business Engineering (Double Degree)(main subject Operations Management)

6

A

Master of Science in Business Engineering(main subject Operations Management)

6

A

Master of Science in Economics

6

A

Master of Science in Economics (Double Degree)

6

A

Exchange programme in Economics and Business Administration

6

A

Teaching languages

English

Keywords

Time series analysis, stationarity, nonstationarity, ARMA models, VAR models, unit root tests, cointegration, panel data.

Position of the course

Broaden the student's knowledge beyond the econometric techniques introduced in the course "Econometrics" to the specific econometric properties of time series analysis and panel data models. Applying the acquired knowledge and abilities by working in small groups on a number of cases.

Contents

- 1 Univariate time series analysis (ARMA models)
- 2 Multivariate time series analyse (VAR models)
- 3 Stationarity versus nonstationarity (unit root tests)
- 4 Regression analysis using nonstationary series (cointegration analysis)
- 5 Introduction panel data

Initial competences

Final objectives from the course "econometrics".

Final competences

- 1 Thorough knowledge of the specific properties of time series and their use in regression analysis.
- 2 A basic knowledge of estimation methods for panel data.
- 3 Develop a scientifically well-founded roadmap for solving practical econometric problem using time series analysis
- 4 Independently and critically reflect on the statistical properties of the applied

methods and techniques and translate this into the choice of an adequate method.

5 Implement the time series methods in econometric software (R)

6 Correctly interpret the estimation results.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

Access to this course unit via an exam contract is unrestricted

Teaching methods

Group work, Seminar, Lecture

Extra information on the teaching methods

Ex cathedra theoretical lectures.

During the group assignment and tutorials students apply the theory to real problems.

Lectures and tutorials are in English.

Study material

Type: Slides

Name: Slides time series analysis

Indicative price: Free or paid by faculty

Optional: no

Language : English

Available on Ufora : Yes

References

- Enders, W., Applied Econometric Time Series (Second Edition), John Wiley & Sons, 2005
- Hamilton, JD, Time Series Analysis, Princeton University Press, 1994
- Harris, R., Cointegration Analysis in Econometric Modelling, Prentice Hall, 1995
- Lütkepohl, H. and M. Krätzig, Applied Time Series Econometrics, Cambridge University Press, 2004.
- Wooldridge, J.M., Introductory Econometrics. A Modern Approach, South-Western, 2009.

Course content-related study coaching

Concerning the content of the course, students can appeal to the support of the lecturer and the assistants. Study material (slides, assignments, solutions to the assignments, ...) are available on Ufora.

Assessment moments

end-of-term assessment

Examination methods in case of periodic assessment during the first examination period

Oral assessment, Written assessment

Examination methods in case of periodic assessment during the second examination period

Oral assessment, Written assessment

Examination methods in case of permanent assessment

Possibilities of retake in case of permanent assessment

not applicable

Extra information on the examination methods

Written and oral exam (with written preparation) exam during which the knowledge of the econometric techniques discussed during this course and the ability to use these techniques to analyse real problems are evaluated.

Practical assignment (in preparation of the written exam) in which the acquired knowledge is applied to real problems. The main part of the exam evaluates the correct interpretation of the student's solution (R output) of this case study. The solution of the case is not evaluated as such.

Calculation of the examination mark

