



School of Economics and Management

## EEH017F, Applied Time Series Analysis, 7.5 credits

*Tillämpad tidsserieanalys, 7,5 högskolepoäng*  
Third Cycle / Doktorandnivå

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### Details of approval

Approved by the Board of the Department of Economic History, Lund University School of Economics and Management 2021-03-09.

### General Information

This is an optional course at the PhD programme.

The language of instruction is English.

### Learning outcomes

On a general level the student will acquire advanced knowledge in the use of time series analysis techniques such as co-integration and panel data regression on economic problems. More specifically, to pass the assessments students will:

#### Knowledge and understanding

- have a deeper understanding of panel data analysis with micro and macro data
- have a deeper understanding of univariate time series analysis in levels,
- understand how unit root hypotheses are formulated and tested in univariate models,
- have an understanding of multivariate time series analysis in levels,
- have a deeper understanding of co-integration analysis,

#### Competence and skills

- apply advanced econometric tools to economic problems using time series,
- choose a suitable time series model to analyse a specific problem,
- evaluate whether the assumptions made by the chosen model are reasonable,
- apply rational modelling strategies even when basic assumptions must be rejected,
- implement econometric analyses of time series using econometric software,

give an account of and discuss their abilities within time series analysis and the appropriateness of different time series methods for the analysis of economic problems,

- pursue further studies in the subject and should be able to search for and evaluate information with a high degree of independence,
- individually write an empirically orientated essay at the master level using time series methods.

#### Judgement and approach

- be able to formulate and test the hypothesis of co-integration in both single equation and multivariate time series models,
- be able to formulate and test hypotheses concerning the co-integration vector,
- be able to generalise their knowledge to economic problems that haven't been treated during the course,
- be able to understand relevant empirical and econometric research.

## Course content

The course gives an introduction to basic concepts within panel data and time series analysis. Multivariate time series analysis is based on VAR models. Non-stationary time series are analysed using unit root tests, co-integration methods and VEC models. Theoretical studies are interwoven with practical applications in economic history and economic demography.

## Teaching and assessment

The course is designed as a series of lectures and computer exercises. Grading is based on individual performance on exercises and on written assignment. Written class room examinations will be offered at more than one occasion. All such exams will be assessed according to regular procedure.

The University views plagiarism very seriously, and will take disciplinary actions against students for any kind of attempted malpractice in examinations and assessments. The penalty that may be imposed for this, and other unfair practice in examinations or assessments, includes suspension from the University.

## Grading scale

Marking scale: Fail or Pass

## Prerequisites

PhD students applying for this course should have at least 60 credit points in either economic history, business administration, economic and social geography, economics, history or the equivalent knowledge.

## Further information

This course cannot be included in the same degree as EKHP07, EKHM44 and EKHM85.