EC306-15 Econometrics 2: Time Series

26/27

Department
Economics
Level
Undergraduate Level 3
Module leader
Alexander Karalis Isaac
Credit value
15
Module duration
10 weeks
Assessment
Multiple
Study location
University of Warwick main campus, Coventry

Description

Introductory description

EC306-15 Econometrics 2: Time Series

Module web page

Module aims

The module will equip the student with the ability to undertake, understand, and critically assess empirical work in economics that uses time-series data, with a view to enabling the student to use econometrics to catalogue and describe empirical regularities and test various propositions.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Illustrative topics might include:

1. A review of relevant matrix algebra, and maximum likelihood estimation
2. The rationale for dynamic models, and some simple time-series model
3. Unit roots and testing for unit roots

4. Time-series models, model selection and forecasting
5. Spurious regression versus cointegration
6. Multivariate models and cointegration
7. Modelling second moments: ARCH and GARCH models
8. State Space Models

Learning outcomes

By the end of the module, students should be able to:

- Carry out empirical analyses using economic and financial time series data.
- Interpret the results of such analyses, in terms of the validity of the inferences that can be drawn, and to appreciate the interplay between data and theory in making such inferences.
- Demonstrate an ability to critically assess empirical papers.

Indicative reading list

Reading lists can be found in Talis

Specific reading list for the module

Subject specific skills

Applied Economics
Economic information
Economic principles
Research and debate
Abstraction
Analytical reasoning
Analytical thinking and communication
Creative thinking
Critical thinking
Policy evaluation
Problem solving

Transferable skills

Data-based skills
IT skills
Numeracy and quantitative skills
Research skills
Information technology
Math, Statistical, data-based research skills
Oral communication
Written communication
Coding Skills

Study

Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Seminars	4 sessions of 1 hour (3%)
Private study	126 hours (84%)
Total	150 hours

Private study description

Private study will be required in order to prepare for seminars/classes, to review lecture notes, to prepare for forthcoming assessments, tests, and exams, and to undertake wider reading around the subject.

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group D5

	Weighting	Study time	Eligible for self-certification
Written Assignment (1200 words)	30%		No
Centrally-timetabled examination (On-campus)	70%		No

A paper which examines the course content and ensures learning outcomes are achieved.

- Answerbook Green (8 page)
- Economics dept. statistical tables (yellow/ red)
- Students may use a calculator

Assessment group R3

	Weighting	Study time	Eligible for self-certification
In-person Examination - Resit	100%		No

- Economics dept. statistical tables (yellow/ red)
- Students may use a calculator

Feedback on assessment

The Department of Economics is committed to providing high quality and timely feedback to students on their assessed work, to enable them to review and continuously improve their work. We are dedicated to ensuring feedback is returned to students within 20 University working days of their assessment deadline. Feedback for assignments is returned either on a standardised assessment feedback cover sheet which gives information both by tick boxes and by free comments or via free text comments on tabula, together with the annotated assignment. For tests and problem sets, students receive solutions as an important form of feedback and their marked assignment, with a breakdown of marks and comments by question and sub-question. Students are informed how to access their feedback, either by collecting from the Undergraduate Office or via tabula. Module leaders often provide generic feedback for the cohort outlining what was done well, less well, and what was expected on the assignment and any other common themes. This feedback also includes a cumulative distribution function with summary statistics so students can review their performance in relation to the cohort. This feedback is in addition to the individual-specific feedback on assessment performance.

Past exam papers for EC306

Availability

Pre-requisites

Any of:

ST218-12 Mathematical Statistics Part A AND
ST219-12 Mathematical Statistics Part B

OR

EC226-30 Econometrics 1

OR

ST230-15 Mathematical Statistics OR
ST232-15 Introduction to Mathematical Statistics OR
ST233-15 Introduction to Mathematical Statistics

AND

ST227-15 Stochastic Processes OR

ST228-15 Mathematical Methods and Statistics and Probability OR
ST229-15 Probability for Mathematical Statistics

To take this module, you must have passed:

- Any of
  - EC226-30 Econometrics 1
  - ST229-10 Probability for Mathematical Statistics
  - ST230-10 Mathematical Statistics

Courses

This module is Optional for:

- Year 4 of UECA-L1N3 BSc Economics and Management with Placement Year
- TECA-L1PA Postgraduate Taught Economics (Diploma plus MSc)
  - Year 1 of L1PA Economics (Diploma plus MSc)
  - Year 2 of L1PA Economics (Diploma plus MSc)
- UECA-3 Undergraduate Economics 3 Year Variants
  - Year 3 of L100 Economics
  - Year 3 of L116 Economics and Industrial Organization
- UECA-4 Undergraduate Economics 4 Year Variants
  - Year 4 of LV16 Economics & Economic History with Study Abroad
  - Year 4 of L103 Economics with Study Abroad
  - Year 4 of LM1H Economics, Politics & International Studies with Study Abroad
- Year 3 of UECA-L1N2 Undergraduate Economics and Management
- Year 3 of UECA-LM1D Undergraduate Economics, Politics and International Studies
- UPHA-L1CA Undergraduate Economics, Psychology and Philosophy
  - Year 3 of L1CA Economics, Psychology and Philosophy
  - Year 3 of L1CC Economics, Psychology and Philosophy (Behavioural Economics Pathway)
  - Year 3 of L1CD Economics, Psychology and Philosophy (Economics with Philosophy Pathway)
  - Year 3 of L1CE Economics, Psychology and Philosophy (Philosophy and Psychology Pathway)
  - Year 4 of L1CB Economics, Psychology and Philosophy (with Intercalated Year)
- UPHA-L1CB Undergraduate Economics, Psychology and Philosophy (with Intercalated Year)
  - Year 4 of L1CG Economics, Psychology and Philosophy (Behavioural Economics Pathway) (with Intercalated Year)
  - Year 4 of L1CH Economics, Psychology and Philosophy (Economics with Philosophy Pathway) (with Intercalated Year)
  - Year 4 of L1CJ Economics, Psychology and Philosophy (Philosophy and Psychology Pathway) (with Intercalated Year)
  - Year 4 of L1CB Economics, Psychology and Philosophy (with Intercalated Year)
- USTA-G300 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics

    - Year 3 of G300 Mathematics, Operational Research, Statistics and Economics
    - Year 4 of G300 Mathematics, Operational Research, Statistics and Economics
- Year 3 of UMAA-GL11 Undergraduate Mathematics and Economics
- Year 4 of UECA-GL12 Undergraduate Mathematics and Economics (with Intercalated Year)
- Year 3 of UPHA-V7ML Undergraduate Philosophy, Politics and Economics

This module is Unusual option for:

- Year 3 of UPHA-L1CA Undergraduate Economics, Psychology and Philosophy
- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
    - Year 3 of V7MR Philosophy, Politics and Economics (Bipartite with Economics Major)
    - Year 3 of V7MP Philosophy, Politics and Economics (Bipartite)
- UPHA-V7MM Undergraduate Philosophy, Politics and Economics (with Intercalated year)
    - Year 4 of V7MS Philosophy, Politics and Economics (Bipartite with Economics Major) (with Intercalated Year)
    - Year 4 of V7MQ Philosophy, Politics and Economics (Bipartite) with Intercalated Year
    - Year 4 of V7MM Philosophy, Politics and Economics (Tripartite) (with Intercalated year)

This module is Core option list B for:

- Year 4 of USTA-G301 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics (with Intercalated

This module is Option list A for:

- USTA-G300 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics
    - Year 3 of G300 Mathematics, Operational Research, Statistics and Economics
    - Year 3 of Y602 Mathematics,Operational Research,Stats,Economics
    - Year 4 of G300 Mathematics, Operational Research, Statistics and Economics
- USTA-G301 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics (with Intercalated
    - Year 4 of G30E Master of Maths, Op.Res, Stats & Economics (Actuarial and Financial Mathematics Stream) Int
    - Year 5 of G30E Master of Maths, Op.Res, Stats & Economics (Actuarial and Financial Mathematics Stream) Int
- Year 3 of USTA-Y602 Undergraduate Mathematics,Operational Research,Statistics and Economics
- Year 4 of USTA-Y603 Undergraduate Mathematics,Operational Research,Statistics,Economics (with Intercalated Year)

This module is Option list B for:

- Year 5 of USTA-G301 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics (with Intercalated
- Year 4 of USTA-G1G3 Undergraduate Mathematics and Statistics (BSc MMathStat)
- Year 3 of USTA-GG14 Undergraduate Mathematics and Statistics (BSc)
- Year 4 of USTA-G140 Undergraduate Mathematics and Statistics (MMathStat)

- Year 4 of USTA-GG17 Undergraduate Mathematics and Statistics (with Intercalated Year)

This module is Option list C for:

- Year 4 of USTA-G301 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics (with Intercalated
- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
    - Year 3 of V7MP Philosophy, Politics and Economics (Bipartite)
    - Year 3 of V7ML Philosophy, Politics and Economics (Tripartite)
- UPHA-V7MM Undergraduate Philosophy, Politics and Economics (with Intercalated year)
    - Year 4 of V7MS Philosophy, Politics and Economics (Bipartite with Economics Major) (with Intercalated Year)
    - Year 4 of V7MQ Philosophy, Politics and Economics (Bipartite) with Intercalated Year
    - Year 4 of V7MM Philosophy, Politics and Economics (Tripartite) (with Intercalated year)

This module is Option list D for:

- Year 3 of USTA-G1G3 Undergraduate Mathematics and Statistics (BSc MMathStat)
- Year 3 of USTA-G140 Undergraduate Mathematics and Statistics (MMathStat)
- Year 3 of UPHA-V7ML Undergraduate Philosophy, Politics and Economics