IB9HI-15 Case Studies in Data Science and Economics

26/27

Department
Warwick Business School
Level
Taught Postgraduate Level
Module leader
Shaun Vahey
Credit value
15
Module duration
2 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

The module aims to provide training in applying data science methods to contemporary economic problems by looking at case studies.

Module web page

Module aims

Specifically, the module aims to give students the opportunity to conduct a data science project using economic data. The students will discover how to replicate and extend a data science case. The module aims to give them the appropriate grounding in economic analysis, while developing their research and communication skills.
A formative group exercise will be set whereby groups will be given data and asked to conduct a statistical analysis of the economic problem. This will serve as a "dummy run" for the individual assignment, and there will be in-class feedback.

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.

There will be four case studies from the following list of six. Topics will be rotated through successive years.

1. Data visualisation and house price fluctuations
2. Causation, correlation and the statistical links between asset prices and recessions
3. Big data and international currency movements
4. The difficulties of measuring latent economic variables (eg the output gap) and uncertainty quantification
5. Automated monetary policy bots
6. Textual data recognition and predicting FX rates

Learning outcomes

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

- Demonstrate understanding of the importance of data science methods through contemporary economic applications
- Demonstrate understanding of the economic issues raised in the case studies (including foreign exchange determination, interest rate prediction, asset prices, house prices, monetary policy)
- Demonstrate considered thinking about theoretical concerns
- Find and explain a narrative that blends theoretical and empirical issues

Indicative reading list

Reading lists can be found in Talis

Subject specific skills

Utilise a variety of tools from data science (including data visualization, statistical testing, machine learning, big data methods)
Use economic thinking to analyse contemporary issues
Interpret evidence

Transferable skills

Written communication.
Problem solving.

Study

Study time

Type	Required
Lectures	10 sessions of 1 hour (7%)
Online learning (scheduled sessions)	(0%)
Other activity	16 hours (11%)
Private study	50 hours (33%)
Assessment	74 hours (49%)
Total	150 hours

Private study description

Private study to include preparation for lectures

Other activity description

8 x 2 hrs face-to-face workshops

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 A5

Assessment component	Weighting	Study time	Eligible for self-certification
Individual Assignment	100%	74 hours	Yes (extension)

Reassessment component is the same

Feedback on assessment

Comments on group work and individual assignments

Availability

Pre-requisites

Students should be alerted to the fact that they will need intermediate MS Excel

Courses

This module is Optional for:

- Year 1 of TIBS-H60Z MSc Financial Technology
- Year 1 of TIBS-N500 MSc in Marketing and Strategy
- Year 1 of TIBS-N1N3 Postgraduate Taught Business Analytics
- Year 1 of TIBS-N1F5 Postgraduate Taught Business and Finance
- Year 1 of TIBS-N1F2 Postgraduate Taught Business with Consulting
- Year 1 of TIBS-N1F3 Postgraduate Taught Business with Marketing
- Year 1 of TIBS-N1QG Postgraduate Taught Business with Operations Management
- Year 1 of TIBS-N1F4 Postgraduate Taught International Business (MINT)
- TIBS-N2N3 Postgraduate Taught Management
    - Year 1 of N2N3 Management
    - Year 1 of N2N4 Management (Elite Sports Management)