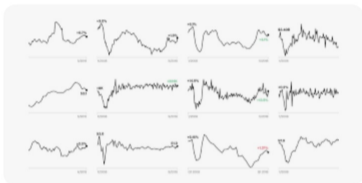


# Econometrics

Prof. Dr. Matei Demetrescu

# Make (causal?) sense of economic data



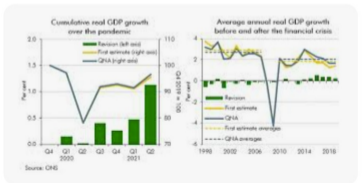
**B** Bloomberg.com  
The 12 Global Economic Indicators to Watch



**R** Reuters  
Gold firms on softer dollar as market awaits US...



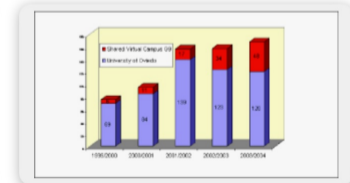
**E** Eolas Magazine  
Understanding Ireland's 'unreal' economic growth | ...



**O** Office for Budget Responsibility  
Economic data revisions Archives - Office for Budget...



**S** State Bar of Wisconsin  
Inside Track: Legal Research: Finding Economic ...



**R** ResearchGate  
Evolution of Students in "Economic Data Analysis" ...

# Aims and scope

The aim of the course is to provide you with an understanding of the inner workings of econometric methods.

You will

- have working knowledge of the most common econometric tools
- ... and be able to acquire knowledge on further, more specific instruments (e.g. panel data methods)
- be able apply econometric techniques to an empirical question,
- ... and critically discuss the validity of other people's empirical findings.

# Aims and scope cont'd

## Intended audience

- Master Econometrics, Master Data Science, Master Statistics.

## Prerequisites

- Statistical Theory
- Working knowledge of matrix algebra

# Outline

- 1 Review: The linear model and ordinary least squares
- 2 Review: Estimation and testing under classical assumptions
- 3 Stochastic regressors
- 4 ML and Quasi-ML estimation
- 5 Testing: (Quasi-) LR, Wald, and LM tests; the Hausman principle
- 6 Generalized least squares
- 7 Nonlinear models
- 8 Instrumental variables and generalized method of moments
- 9 Specification tests
- 10 Model selection

# Schedule

- Tuesdays 16-18, Thursdays 10-12
- Tutorials with Ignacio Moreira and N.N. (choice between slots, times tba)
- Rooms: see LSF

# Materials

- Lecture notes will be made available as pdf file
- Useful textbooks:
  - Greene, W.H. (2018), *Econometric Analysis*; Pearson, 8th edition (or 7th, or 6th...).
  - Hansen, B.E. (2022), *Econometrics*; Princeton University Press.
  - Davidson, R. and J.G. MacKinnon (2003), *Econometric Theory and Methods*; Oxford University Press (Int'l edition 2009).
  - Hayashi, F. (2000), *Econometrics*; Princeton University Press.

# Further details

## Contact

- `mdeme@statistik.tu-dortmund.de`,  
`ignacio.moreira-lara@tu-dortmund.de`

## Office hours

- by appointment; but before resorting to such desperate measures do not hesitate to ask simpler questions per email.



# Q & A

Any specific questions?