Course title: Applied Econometrics

ECTS code: 14.3.EE.PZ.879

ECTS credits: 4

Name of unit administrating study: OTHER

Field of study: Economics

Field of specialisation: NONE

Teaching staff: Paweł Miłobędzki, Associate Professor; Dorota Ciołek, PhD

Number of hours

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Classes</th>
<th>Tutorials</th>
<th>Laboratory</th>
<th>Seminars</th>
<th>Language classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Forma aktywności

Year&Type of studies*:

- Semester: 3,
- Type of course: obligatory
- Language of instruction: English

Teaching form: in-class learning

Teaching methods: Lectures including multimodal presentations, Case studies, Work in computer laboratories.

Prerequisites (required courses and introductory requirements)

Required courses:
Basics of micro- and macroeconomics, international economics, finance, mathematics, descriptive and mathematical statistics as well as econometrics taught at the BA and MA levels.

Introductory requirements:
Students should be familiar with the principles of consumer and producer behaviour, basic models of market competition, general equilibrium and growth, international trade, capital and money markets. The knowledge of elementary linear algebra, differential and integral calculus, statistical theory and some skills in the exploratory data analysis are essential.

Assessment method, forms and criteria

Assessment method:
Course completion (graded)

Assessment criteria:
Students are expected to write an essay of approximately 1500 words (excl. an appendix containing the statistical stuff, tables, references and other forms of documentation) dedicated to the verification of a well established hypothesis learned while attending the core courses in economics. The deadline for its delivery is 2 weeks prior the beginning of examination session. In doing so they are advised to use any data set from those accompanying Gretl. The writing instructions are to be found in Ramanathan (see the recommended reading list below). The essay is to be later discussed with the lecturer. The final assessment will be made upon the essay (60%) and the discussion (40%).

Course objectives

Provide students with the advanced tools of quantitative analysis in economics to help them conduct their own empirical research.

Learning outcomes

Knowledge

E3_W03 Elementary knowledge of the estimation frameworks in econometrics (least squares, maximum likelihood, GMM), cross section and univariate time series regressions, diagnostic checking, model selection and specification testing gained while studying both the econometrics itself as well as its applications in economics/finance.

E3_W04 Elementary knowledge of the estimation frameworks in econometrics (least squares, maximum likelihood, GMM), cross section and univariate time series regressions, diagnostic checking, model selection and specification testing gained while studying both the econometrics itself as well as its applications in economics/finance.

Verification of learning outcomes - Knowledge

Outcomes

- written exam
- oral exam
- test
- essay/paper/portfolio
- basics/homeworks
- individual presentation
- group presentation
- classroom activities
- classroom discussion
- individual project
- group project
<table>
<thead>
<tr>
<th>Course contents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regression model evaluation:</strong> data problems (proxy variables, measurement errors), estimation methods (OLS, ML, GMM), regression diagnostics, heteroscedastic and autocorrelated disturbance terms, stochastic explanatory variables.</td>
</tr>
<tr>
<td><strong>Time series econometrics:</strong> stationary and nonstationary time series, specific univariate series (random walks, drifts and trends), detrending, unit root tests, cointegration, fitting models with nonstationary time series.</td>
</tr>
<tr>
<td><strong>Panel data methods:</strong> pooled cross-sections, fixed and random effects, one-way and two-way models, estimation with first differences, instrumental variables.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommended reading lists</th>
</tr>
</thead>
</table>

**Contact**

pawel.milobedzki@ug.edu.pl, dciolek@wzr.ug.edu.pl,