



Ljubljana Summer School
"Take the Best from East & West"
4 – 22 July 2022

Applied Regression Analysis for Economics, Finance and Business in Stata and R

Bachelor (final year) & Master course (ECTS: 7)

14.00 – 16.30

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Course objectives and learning outcomes:

In order to understand the complicated economic, financial and business environment it is vital to be able to competently analyse economic, financial and business data. Regression analysis is one of the most comprehensive approaches to achieve this goal. The purpose of this course is to address the basic methodological concepts related to the linear regression model and statistical inference, and then introduce, based on this, three additional, more specialized topics; univariate time series, discrete choice analysis and panel data analysis. The course is very much practically oriented; the analysed topics are applied to real data from various examples and case studies in the fields of economics, finance and business.

Key objectives and competences:

- To develop the capability to choose appropriate techniques for the analysis of various relationships in economics, finance and business.
- To develop the capability to properly interpret the analytical results obtained or found in economics, finance and business.

After completing this course, the student should be able to set up independently the research problem and perform the applied regression analysis.

Prerequisites for attending the course:

No reading or extra preparation is required prior to the course.

Course syllabus/Daily topics:

PROGRAMME DAY	ACTIVITY/TOPIC/SESSION
Monday, 4 July	LSS Welcome session (no lectures)
Tuesday, 5 July	Classical linear regression model
Wednesday, 6 July	Classical linear regression model
Thursday, 7 July	Classical linear regression model • Hypothesis testing
Friday, 8 July	Hypothesis testing
Monday, 11 July	Model diagnostics and univariate time series
Tuesday, 12 July	Model diagnostics and univariate time series
Wednesday, 13 July	Model diagnostics and univariate time series
Thursday, 14 July	Discrete choice analysis
Monday, 18 July	Discrete choice analysis • Panel data analysis



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Tuesday, 19 July	Panel data analysis
Wednesday, 20 July	No lectures (preparation for final examination)
Thursday, 21 July	Final examination
Friday, 22 July	Meeting hours with students & LSS Farewell session

Teaching methods and tools/software used:

The course consists of lectures with integrated computer exercises. Lectures use interactive teaching methods with MS PowerPoint presentations and demonstrations in Stata and R/RStudio statistical software (everything is done equivalently in both software). Methodological approaches that are taught at any given lecture are then further demonstrated with real data from economics, finance and business. We shall use Gujarati and Porter (2009) as the primary textbook, and Stata and R/RStudio econometric software for computer exercises.

Course materials/List of readings:

1. Gujarati, D. N. and D. C. Porter: *Basic Econometrics: Fifth Edition*. New York, NY: McGraw-Hill/Irwin, 2009.
2. Hill, R. C., W. E. Griffiths and G. C. Lim: *Principles of Econometrics: Fourth Edition*. Hoboken, NJ: John Wiley & Sons, 2011.

However, the textbooks are not indispensable, as all the required hand-outs and additional study materials will be distributed during the course.

Examination methods and evaluation criteria (weighted categories):

Course assessment is based on take-home mid-term (35%) and final exam (65%). Attendance and active participation is expected and can take a minor share of course assessment (bonus).

Grading scale:

DEFINITION	%	LOCAL SCALE	ECTS SCALE	Grade (USA)
exceptional knowledge without or with negligible faults	92-100	10	A	A+, A, A-
very good knowledge with some minor faults	85-91	9	B	B+, B
good knowledge with certain faults	77-84	8	C	B
solid knowledge but with several faults	68-76	7	D	C+, C, C-
knowledge only meets minimal criteria	60-67	6	E	D+, D
knowledge does not meet minimal criteria	<60	5	F	



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Short course leader(s) biography:

Miroslav Verbič is Professor of Econometrics and Professor of Finance at the University of Ljubljana, and Senior Research Fellow at the Institute for Economic Research in Ljubljana. He earned his MSc in Econometrics in 2006 at the University of Amsterdam, and his PhD in Economics in 2007 at the University of Ljubljana. He teaches econometrics at the graduate and undergraduate level at the University of Ljubljana, and abroad as a visiting professor. Since 2015, he has been an expert evaluator for Horizon 2020 of the European Commission's Research Executive Agency. His research interests include econometric modelling, general equilibrium modelling, asset pricing modelling, social security analysis, energy economics, welfare economics, and environmental economics. He is the author of five scientific monographs and more than fifty refereed scientific articles, published in prestigious international scientific journals. He is promoting his research activity in professional associations, such as Econometric Society, International Association for Research in Income and Wealth, and Royal Economic Society. He is engaged in several projects commissioned by the Slovenian government and the European Commission as either head or member of research team.