

Course Syllabus

University: Masaryk University in Brno
Faculty of Economics and Administration
Department of Economics

Course name: Introductory Econometrics

Semester: Fall 2014

Schedule: Tuesday, lecture and lab session 10:15-12:45

Project presentations are on December 2.

Final examination is on December 16.

Room: VT2

Instructor: Dmytro Vikhrov

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Office hours: please, arrange by e-mail.

Course description

The course objective is to introduce students to the tools of data analysis. Students will learn how to formulate an econometric model, estimate its parameters, test model robustness, test hypotheses, interpret results and draw policy implications. Further, students will be introduced to the tools of time series forecasting. Computer lab sessions will be based GRETL software.

Grading: class participation – 20%, two homeworks – 10%, project – 30%, final – 40%.

Reading

Introductory:

Wooldridge, J.M., 2009. Introductory Econometrics: A Modern Approach. 4th edition.

Hill, R.C., Griffiths, W.E., Lim, G.C., 2011. Principles of Econometrics. 4th edition.

Gujarati, D., 2003. Basic Econometrics. 4th edition.

Software manual:

Adkins, L.C., 2013. Using GRETL for Principles of Econometrics, 4th Edition ([download here](#)).

Install GRETL software from [here](#). Download textbook datasets from [here](#).

Advanced:

Kmenta, J., 1997. Elements of Econometrics, 2nd edition.

Greene, W.H., 2012. Econometric Analysis, 7th edition.

Wooldridge, J.M., 2010. Cross-section and Panel Data. 2nd edition.

Course contents

1. Introduction to statistical inference (data generating process, theoretical and empirical distributions, conditional mean and variance, correlation and causality).
Reading: Wooldridge (2009) Appendix A; HGL Ch. 1.1-1.5, P1-P6; Gujarati Ch. 1, Appendix A3-A5; Kmenta Ch. 1.
2. Formulation of a regression model (linear and non-linear effects, dummy variable approach, unobserved heterogeneity).
Reading: Wooldridge (2009) Ch. 2, Ch. 7; HGL Ch. 2, Ch. 7; Gujarati Ch. 2, Ch. 9; Kmenta Ch. 7.
3. Estimation of a linear model with OLS (underlying assumptions, derivation and properties of the estimator, goodness of fit).
Reading: Wooldridge (2009) Ch. 3; Gujarati Ch. 3; Kmenta Ch. 6-7; Greene Ch. 4;
4. Hypotheses testing (formulation of hypotheses and testing).
Reading: Wooldridge (2009) Ch. 4; HGL Ch. 3; Kmenta Ch. 5; Gujarati Ch. 5; Greene Ch. 5.
5. Other estimation methods (likelihood, LAD, GMM).
Reading: Kmenta Ch. 6; Gujarati Ch. 4; Greene Ch. 12.
6. Violation of OLS assumptions (errors in variables, heteroskedasticity, correlation with error term, clustering, multicollinearity, GLS).
Reading: Wooldridge (2009) Ch. 8; Gujarati Ch. 10-12; Kmenta Ch. 8.
7. IV estimation (nature of the identification problem, exclusion restriction, weak instrument, control function).
Reading: Wooldridge (2009) Ch. 15; Kmenta Ch. 9; Greene Ch. 8; Gujarati Ch. 9; Wooldridge (2010) Ch. 6.4.
8. Qualitative response regression models (formulation of likelihood function, probit and logit models, Poisson model, marginal effects, goodness of fit).
Reading: Wooldridge (2009) Ch. 17; Kmenta Ch. 11; Gujarati Ch. 15; Greene Ch. 17-18.
9. Sample selection, truncation and censoring (Heckman correction, Tobit).
Reading: Wooldridge (2009) Ch. 17; Greene Ch. 19.
10. Panel data (modeling unobserved heterogeneity, pooled OLS, FE, RE, autocorrelation, unbalanced panel, dynamic model).
Reading: Wooldridge (2009) Ch. 13-14; Gujarati Ch. 16; Greene Ch. 11.