

**Belarusian Economic Research and Outreach Center**  
**Introduction to Econometrics: Term I**  
**February 24-28, 2014**

Instructor: Maksym Obrizan, Kyiv School of Economics (Kyiv, Ukraine)

Location: TBA

Office hours: please arrange by email

Course webpage: <http://mobrizan.weebly.com/econometrix101.html>

**Course Description**

The purpose of this course is to give students basic knowledge of modern econometric methods. Although we will consider some theory behind those tools the main focus will be on practical skills. In particular, we will consider multiple data sets and problems from real applications. In addition, many examples will be performed in Stata. In this way young Belarusian scientists will be able to strengthen their research with econometric results.

We will start from the overview of the Ordinary Least Squares (OLS) regression - the working horse of the modern econometrics. This will include interpretation of the results, inference, assumptions and implementation in Stata. The next step will be to consider when OLS results may be misleading. Univariate time series methods will be considered next given their importance in macroeconomics and finance. Finally, we will study multivariate time series methods focusing on Vector-Autoregressive (VAR) models.

It is expected that students attend all lectures given a short duration of the course. A final take-home exam will track student progress in the end of the course.

**Textbook, Handouts and Course Materials**

Handouts and exercises will be based on two main sources:

*Introductory Econometrics*, by Jeffrey Wooldridge

and

*Analysis of Financial Time Series*, by Ruey Tsay

In addition, you may consult other classical sources such as

*Introduction to Econometrics*, by James Stock and Mark Watson,

*Econometric Analysis*, by William H. Greene

Course materials will be distributed in class, by email or on the course webpage and it is your responsibility to check all three sources regularly. Stata exercises are essential part of the course, thus, it is expected that you have access to a computer with Stata.

### **Tentative Schedule**

Day 1: Review of the Ordinary Least Squares (OLS) regression (assumptions, properties and interpretation)

Introduction to Stata (loading data, descriptive statistics, running OLS regression)

Day 2: Inference in the OLS model (hypothesis testing, confidence intervals, implementation in Stata)

Day 3: Advanced topics in the OLS model (violations of classical assumptions, causal interpretation, Stata exercises)

Day 4: Introduction to univariate time series (introduction to ARMA, seasonal models, Stata applications)

Day 5: Multivariate time series (overview of matrix algebra, Vector-Autoregressive models, Stata examples)