TRAINING COURSE | ONLINE

LINEAR PANEL DATA MODELS IN STATA

23rd-26th November 2020

Panel data analysis is increasingly used in econometrics, financial analysis, public health and social sciences, since it enable researchers to allow for different types of latent heterogeneity between observations. Allowing researchers for example, to control for variables that cannot be directly observed or measured, such as cultural factors or differences in business practices across companies. The use of Panel Data in empirical studies also tends to result in a considerable improvement in the accuracy of the obtained estimates, since panel data sets usually contain more sample variability and higher degrees of freedom. Finally, panel data allows for the estimation of dynamic models, with causal relationships which may not arise instantaneously, but over a period of time.

This introductory course offers participants the opportunity to acquire the necessary theoretical background and the applied skills to enable them to: i) independently employ micro panel data techniques to their own research topics, and ii) to understand and evaluate micro panel data analyses published in the academic literature.

This course focuses on the linear model techniques adopted for the analysis of a typical micro panel-data set with a large number of individuals and a small number of time periods. Such techniques include: fixed and random effects models; robust inference and instrumental-variables estimators.

In common with TStat's training philosophy, each individual session is composed of both a theoretical component (in which the techniques and underlying principles behind them are explained), and an applied (hands-on) segment, during which participants have the opportunity to implement the techniques using real data under the watchful eye of the course tutor. Throughout the course, theoretical sessions are reinforced by case study examples, in which the course tutor discusses and highlights potential pitfalls and the advantages of individual techniques. The intuition behind the choice and implementation of a specific technique is of the utmost importance. In this manner, the course leader is able to bridge the "often difficult" gap between abstract theoretical methodologies, and the practical issues one encounters when dealing with real data. At the end of the course, participants are expected to be able to autonomously implement the theories and methodologies discussed during the course.

TARGET AUDIENCE

The panel data training course is of particular interest to Master and Ph.D. Students, researchers in public and private research centres and professionals working in the following fields: Agricultural Economics, Economics, Finance, Management, Public Health, Political Sciences and the Social Sciences seeking to acquire the "introductory" applied and theoretical toolset to enable them to undertake independent empirical research using panel data.

COURSE CODE

D-EF10-A-OL

https://www.tstattraining.eu/training/panel-data-analysis-stata-a-ol/

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PREREQUISITES

Participants are required to have a good working knowledge of the OLS regression model and the statistical software Stata. Knowledge at the argoments illustrated in TStat's course Introduction to Analysing Micro Data in Stata will also prove to be a advantage.

PROGRAM

SESSION I: INTRODUCTION

1. Panel data: benefits for estimation and inference
2. Preliminary commands: ***xtset, xtdescribe***

SESSION II: LINEAR PANEL DATA MODELS WITH EXOGENOUS VARIABLES

1. One-way and two-way fixed effect estimators: ***xtreg, fe***
2. Random Effects Estimators: ***xtreg, re, xtmixed***

SESSION III: LINEAR PANEL DATA MODELS WITH EXOGENOUS VARIABLES: ROBUST INFERENCE

1. Robust covariance estimators
2. The first-differenceestimator
3. Testing for non *i.i.d.* errors
4. Testing Random Effects against Fixed Effects:
   - non-robust approach using ***Hausman***
   - robust approach using Mundlak auxiliary regression (Wooldridge, 2010)

SESSION IV: LINEAR PANEL DATA MODELS WITH ENDOGENOUS VARIABLES

1. Fixed and Random Effect IV Estimators: ***xtivreg***
2. Hausman and Taylor's estimator: ***xthtaylor***

USEFUL READINGS

- Microeconometrics using Stata, Revised Edition, (2010) di A. C. Cameron e P. K. Trivedi, Stata Press
- Econometric Analysis of Cross Section and Panel Data (2010) di J. Wooldridge, MIT Press

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DATE AND LOCATION

Due to the current COVID-19 situation, the 2020 edition of this Training Course will now be offered ONLINE.

To facilitate the transition to an online format, the course programme has been transformed into 4 sessions running from 10.00 am to 1.30 pm Central European Time (CET) on the 23rd-26th November 2020.

A 45 minutes informal evening study group session will also be scheduled, during which participants are encouraged to discuss further issues arising from either the arguments addressed or practical sessions undertaken. The course leader will also be available during this session to offer feedback and guidance on how to deal with specific research issues.

REGISTRATION FEES

Full-time students*: € 710.00
Academic: € 1010.00
Commercial: € 1350.00

*To be eligible for student prices, participants must provide proof of their full-time student status for the current academic year.

Fees are subject to VAT (applied at the current Italian rate of 22%). Under current EU fiscal regulations, VAT will not however applied to companies, Institutions or Universities providing a valid tax registration number.

The number of participants is limited to 8. Places will be allocated on a first come, first serve basis. The course will be officially confirmed, when at least 5 individuals are enrolled.

Course fees cover: teaching materials (handouts, Stata *do files* and datasets to used during the course) and a temporary licence of Stata valid for 30 days from the beginning of the course.

Individuals interested in attending this course must return their completed registration forms by email (training@tstat.eu) to TStat by the 13th November 2020.

Further details regarding our registration procedures, including our commercial terms and conditions, can be found at **https://www.tstattraining.eu/training/panel-data-analysis-stata-a-ol/.**

CONTACTS

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