



DEPARTMENT OF STATISTICS AND ECONOMETRICS

DISCIPLINES FOR POSITION NO. 31, ASSOCIATE PROFESSOR

Econometrics, Econometrics (in English)

1. ECONOMETRICS (in Romanian and in English)

1.1. *Simple regression model*

- Defining simple regression model and parameter estimation writing the model by presenting concrete examples; assumptions; parameter estimation by the method of least squares (review)
- Testing parameters parameter estimator and estimate; properties of estimators; significance testing parameters estimation intervals for the parameters
- Validation of regression model
- Analysis of variance - ANOVA
- And determining the correlation test report
- Testing the correlation coefficient
- Using economic analysis model
- Testing normality of errors; predicting variable explained: point and confidence interval; examples evidence the simple regression model using

1.2. *The multiple regression*

- The presentation and parameter estimation writing using an example model;
- assumptions; parameter estimation
- Statistical tests, selecting the best model of nonlinear regression models properties of estimators, significance testing and confidence intervals; test the validity of the model choice of regression model

1.3. *Regression model assumptions and verification*

- Homoscedasticity analysis (causes, consequences of the heteroscedasticity; presence of errors, statistical tests, correction)
- Autocorrelation analysis errors (causes, consequences presence of autocorrelation errors, statistical tests, correction)
- Multicollinearity analysis (causes, consequences of multicollinearity, statistical tests, correction)
- Simultaneous equations models (model definition from one example; conditions identification parameter estimation)



1.4. *The econometric analysis of time series*

- Characteristics of time series; Definition of the series; Types of series; Components of the series; Smoothing techniques of time series; Estimating the trend
- The Seasonal component: Identification; Estimation; Forecasting phenomena affected by seasonality
- Stationary time series: Definition; Models: MA, AR, ARMA, ARIMA

Bibliography

1. Andrei, T., Statistică și econometrie, Ed. Economică, București, 2004
2. Andrei, T., Bourbonais, R, Econometrie, Ed. Economică, București, 2008
3. Tănasoiu, OE, Iacob, Al,, Introduction a l'econometrie, Ed. ASE, Bucuresti, 2008
4. Voineagu, V., Țițan, E., Țerban, R., Ghiță, S., Todose, D., Boboc, C., Pele, D., Teorie și practică econometrică, Ed. METEOR PRESS, București, 2007

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