My lab group requirements for final projects – details for specific models
Might be updated in the future

1. **Time series models – ARDL models**

   a) stationarity tests;

   b) general-to-specific approach to variables selection;

   c) parameters interpretation;

   d) hypotheses verification;

   e) Ramsey-Reset test - linear form of the relationship;

   f) Breusch-Pagan's and White's tests – homoscedasticity;

   g) Breusch-Godfrey test – no autocorrelation;

   h) compare the final ARDL model with ARIMA model.

2. **Cointegration analysis**

   a) stationarity tests;

   b) cointegration testing;

   c) general-to-specific approach to variables selection;

   d) parameters interpretation - short-term and long-term part;

   e) hypotheses verification;

   f) Ramsey-Reset test - linear form of the relationship;

   g) Breusch-Pagan's and White's tests – homoscedasticity;

   h) Breusch-Godfrey test – no autocorrelation.

3. **Models with Binary Dependent Variables**

   a) estimation of linear probability model (OLS with White's robust matrix), logit model, and probit model, selection of significant variables;

   b) choice between logit and probit on the basis of information criteria;

   c) general-to-specific method to variables selection;

   d) at least one nonlinear relationship (variable to a power) and interaction between variables;

   e) present the general model (LPM, logit, and probit), the final model (the specif model) in one quality table. If there is space, at least one intermediate model might be presented;

   f) calculation and interpretation of marginal effects for the final model (from the general-to-specific approach);

   g) calculation and interpretation of odds ratios;

   h) perform the linktest and interpret the result;

   i) interpretation of the appropriate R^2 statistics (R^2 McKelvey-Zavoina, count R^2, and adjusted count R^2;

   j) hypotheses verification;

   k) perform the Hosmer-Lemeshow and alike tests.

4. **Ordered Choice Models**

   a) estimate ordered probit and ordered logit, selection of the covariates;

   b) general-to-specific method to variables selection;

   c) at least one nonlinear relationship (variable to a power) and interaction between variables;

   d) present the general models (LPM, logit, and probit), the final model (the specif model) in one quality table. If there is space, at least one intermediate model might be presented;

   e) calculation and interpretation of marginal effects for the final model (from the general-to-specific approach);

   f) interpretation of the appropriate R^2 statistics (R^2 McKelvey-Zavoina, count R^2, and adjusted count R^2;

   g) perform the linktest and interpret the result;

   h) perform the the Hosmer-Lemeshow test, the Lipsitz, and the Pulkstenis-Robinson tests;

   i) check the proportional odds assumption.

5. **Models for Count Data**

   a) estimate Poisson model, negative binomial regression, Zero-Inflated Poisson Model;

   b) choose the most appropriate one from the three mentioned in point (a);

   c) at least one nonlinear relationship (variable to a power) and interaction between variables;

   d) general-to-specific method to variables selection;

   e) present the general models (Poisson model, negative binomial regression, Zero-Inflated Poisson Model), the final model (the specific model) in one quality table. If there is space, at least one intermediate model might be presented; Poisson model, negative binomial regression, Zero-Inflated Poisson model;

   f) interpret the final model parameters;

   g) interpretation of the appropriate R^2 statistics (R^2 McKelvey-Zavoina, count R^2, and adjusted count R^2;

   h) perform the linktest and interpret the result;

6. **Multinomial Logit**

   a) general-to-specific method for variables selection;

   b) at least one nonlinear relationship (variable to a power) and interaction between variables;

   c) calculation and interpretation of marginal effects for the final model (from the general-to-specific approach);

   d) present the general model, the final model (the specific model) in one quality table. If there is space, at least one intermediate model might be presented;

   e) perform the linktest and interpret the result.

7. **Conditional Logit**

   a) general-to-specific method to variables selection;

   b) at least one nonlinear relationship (variable to a power) and interaction between variables;

   c) calculation and interpretation of marginal effects for the final model (from the general-to-specific approach);

   d) present the general model, the final model (the specific model) in one quality table. If there is space, at least one intermediate model might be presented;

   e) perform the linktest and interpret the result.

8. **Limited Dependent Variables (tobit)**

   a) general-to-specific method to variables selection;

   b) at least one nonlinear relationship (variable to a power) and interaction between variables;

   c) calculate and interpret three kinds of marginal effects;

   d) present the general model, the final model (the specific model) in one quality table. If there is space, at least one intermediate model might be presented;

   e) interpretation of the appropriate R^2 statistics;

   f) check if the residuals are normally distributed;

   g) perform the linktest and interpret the result.

9. **Panel Data Models**

   a) estimate model with fixed and random effects estimators, check whether individual effects are significant;

   b) perform the Hausman specification test;

   c) general-to-specific method to variables selection;

   d) at least one nonlinear relationship (variable to a power) and interaction between variables;

   e) diagnostic tests for the final model;

   f) interpret the final model parameters;

   g) present the general model, the final model (the specific model) in one quality table. If there is space, at least one intermediate model might be presented.