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;   DF test

   b) general-to-specific approach to variables selection;   how to do this in ts

   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; *这里的评估指什么? 选择一个合适的吗? 说明为什么选择这个模型吗*

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

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

   likelihood 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; *we dont need to do this*

   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.