

### Essay Questions for Final Exam

Two of the following six questions will be randomly selected for the final exam. You should allocate about twenty minutes of exam time to answering each question. Your grade on these answers will depend on the coherence and completeness of the answer and on your demonstrating knowledge of the material covered in this course. This part of the exam is open-book but not open-notes.

- 1) Explain the relationships between OLS and the following alternative estimators: IV, GLS, ML, GMM.
- 2) Discuss the types of problems that can occur when using time-series data in regressions and what econometric techniques have been developed to deal with these problems.
- 3) Multicollinearity: discuss different ways of addressing it/dealing with it.
- 4) Cases where the estimated model is not the true model; give several examples where this happens and discuss the problem(s) that occur in each case.
- 5) Explain the following terms and the relationship between these terms in the econometric context: structural; reduced form; exogenous; endogenous. Describe an example from economics that demonstrates the relevance of these terms.
- 6) Discuss how sample selection can affect both estimation and interpretation of results, including how sample selection can be explicitly accounted for during estimation. Describe an example of a case in economics where sample selection occurs, and how you would deal with it in your case.