

Course name: Econometrics 3a: Methods for
Analyzing Micro Data
Course code: EC7412
Examiner: Mårten Palme
Number of credits: 7,5 credits
Date of exam: August 18, 2017
Examination time: 3 hours

Write your identification number on each paper and cover sheet (the number stated in the upper right hand corner on your exam cover).

Do not write answers to more than one question in the same cover sheet. Explain notions/concepts and symbols. If you think that a question is vaguely formulated, specify the conditions used for solving it. Only legible exams will be marked. No aids are allowed.

The exam consists of 3 questions. Questions 1 and 3 are worth 30 points and question 2 is worth 40 points, 100 points in total. For the grade E 45 points are required, for D 50 points, C 60 points, B 75 points and A 90 points.

Results will be posted on mitt.su.se three weeks after the exam, at the latest

Good luck!

1.

- a. In the context of binary outcomes, explain the difference between a Random utility model (RUM) and a latent variable threshold model.
- b. Define a likelihood ratio test and describe how it can be used to test between a proposed model and a saturated model if you have categorical independent variables only.
- c. In the framework of a latent variable threshold model, suppose that you have continuous data on the dependent variable above the threshold. How can you make use of these additional data? What are the advantages with this model? What additional assumptions are needed?

2.

- a. Suppose you want to study the differentials in *wage offers* between two different demographic groups. One of the groups has a much higher rate of labor force participation. Suggest three different approaches to do that. What assumptions do they require?
- b. Suppose you want to estimate the linear relation $Y_i = \alpha + \beta X_i^* + \varepsilon_i$, where you can only observe X , which is X_i^* with an error, i.e., $v_i = X_i - X_i^*$, where v_{it} follows an iid distribution with $\sigma_v^2 \neq 0$. How would that affect your OLS estimate of β ? How would this change if you have access to panel data and use a fixed effects estimator?

3.

- a. Explain the difference between true and spurious duration dependence in the context of a proportional hazard model. Why does the difference matter when it comes to estimation of the model?
- b. Give different examples of how to handle true duration dependence in proportional hazard models.
- c. Give an example of an empirical problem where you can use a competing risk model. How would you interpret the estimates from the model? What assumptions are necessary for obtaining consistent estimates if you estimate the model by simply treating individuals with other exit routes than the one under study as censored observations?