

ECON 861
Empirical MicroEconomics II
Winter Term 2012/13

Assignment 4
*Due: In Class (DH 213) on **April 2nd** 2013*

Rules of the 'game':

- 1) you can work in groups (actually, I encourage you to do so), but you **MUST** submit your own set of answers
- 2) you **MUST** list the people you worked with in the front page
- 3) late submissions will **NOT** be accepted. If you cannot make it to the class, you can pop into my office (DH306) and submit the assignment whenever you are ready, before the 2nd
- 4) I will keep the set of answers you are going to hand in, so please make copies if you think you are going to need them
- 5) you have to download the datasets for the exercises from the webpage of the course:
http://qed.econ.queensu.ca/pub/faculty/cozzi/Webpage/Cozzi_ECON861.htm

Devote some time to give the graphs, plots and tables a format easy to understand. Also the way you present your answers matter for the final grade. Even if a question is mainly analytical, briefly explain what you are doing, stressing the economic meaning of the various steps.

Ex.1: Estimation of Bivariate Probit Models.

Use again the dataset we used for the first assignment: PS1_1.dta.

- a) Estimate a bivariate probit model for the joint choice of being a union member and working part-time. Use *grade*, *p_exp*, *d_married* and a constant as regressors.
- b) Interpret your results.
- c) Could you have estimated the two probits separately?

Ex.2: Estimation of Multinomial Logit Models.

Download the first new dataset: PS4_1.dta. Keep the observations only for the year 1987. The objective is to study the determinants of three occupations: studying, working, and not working (you have to use the variable *choice* to generate your dependent variable).

- a) Estimate a multinomial logit model using *educ*, *exper*, *expersq*, *black* and a constant as regressors.
- b) Interpret your results.

Ex.3: Estimation of Tobit and Heckit Models.

Download the second dataset: PS4_2.dta. We use the data to estimate a wage offer function for the 753 married women in the sample, accounting for potential selection bias into the workforce. The dependent variable is *lnwage*, the log of wages.

- a) Estimate the model using OLS and with *educ*, *exper*, *expersq*, and a constant as regressors.
- b) Estimate the model using Tobit and with the same regressors used in point a). Which assumptions are you making for this framework to be valid?
- c) Estimate the model using Heckman's two-step procedure. Use the dedicated command in STATA. Do also every step involved in the estimation. Report the values obtained in each step.

In the selection equation use the following variables: *educ*, *exper*, *expersq*, *nwifeinc*, *age*, *kidslt6*, and *kidsge6*. Why do we use these variables? How many exclusion restrictions are we imposing?

- d) Which approach you consider the best one? Why?