

## **Quiz 9**

### **Question 1:**

Use "Quiz-9\_data.dta" for this exercise.

In this exercise, you will estimate a (two-step) Heckit model of the logarithm of wage as a function of two explanatory variables: age and education.

- a) Estimate a probit model of labor force participation. Use age, education, married and children as explanatory variables. Interpret the estimates.
- b) Regress  $\ln$ wage on age and education using OLS. Interpret the estimates.
- c) Estimate the Heckit model with no exclusion restrictions, using nonlinearity of the inverse Mills ratio to identify the parameters. Interpret the estimates.
- d) Estimate the Heckit model using married and children as exclusion restrictions to identify the model. Do you think these are appropriate exclusion restrictions?
- e) Interpret the estimates. Do you think there is evidence for selection bias?

### **Question 2:**

Use "mus16data.dta" for this exercise.

In this exercise, you will estimate a (two-step) Heckit model of the logarithm of ambulatory expenditures as a function of age, female, educ, blhisp, totchr, and ins.

- a) Estimate the Heckit model with no exclusion restrictions, using nonlinearity of the inverse Mills ratio to identify the parameters. Interpret the estimates.
- b) Estimate the Heckit model using income as the exclusion restriction to identify the model. Do you think this variable is an appropriate exclusion restriction?
- c) Interpret the estimates. Do you think there is evidence for selection bias?