

STOCKHOLM UNIVERSITY
Department of Economics

Course name: Labour Market Economics
Course code: EC2102
Examiner: Ann-Sofie Kolm and Peter Skogman Thoursie
Number of credits: 7,5 credits
Date of exam: 7 June
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 6 questions. Each question is worth either 10 or 20 points, 100 points in total. For the grade E 40 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 June 27.

Good luck!

Question 1. (20 points) Average work hours in the population can be decomposed in the following way:

$$\frac{\text{Total work hours}}{\text{population}} = \frac{\text{Total work hours}}{\text{employed}} \frac{\text{employed}}{\text{labour force}} \frac{\text{labour force}}{\text{population}}$$

Use theory and discuss how each component on the right hand side of this expression is likely to be affected by an Earned Income Tax Credit (EITC). How is each of the components affected? Why are they affected (that is, what is the intuition)?

Question 2. (20 points) State Marshall's rules. Then, consider a firm that sells cleaning services to households. Is this firm's labour demand likely to be elastic or not? Use Marshall's rules and discuss which factors affecting the elasticity of labour demand are likely to be important for this firm. Motivate your answer.

Question 3. (10 points) The tournament model can explain why some persons have very high earnings. Explain the general ideas behind the model, and why it predicts the existence of very high earnings.

Question 4. (20 points)

- (i) Suppose all workers have the same preferences represented by

$$U = \sqrt{w} - 2x$$

where w is the hourly wage rate (expressed in SEK) and x represents whether the job is physically demanding or not. There are only two types of jobs in the economy, a physically demanding job ($x = 1$) and a job that is not physically demanding ($x = 0$). Let w_0 be the wage paid by the job that is not physically demanding and w_1 be the wage paid for doing the job that is physically demanding. If $w_0 = 100$, what is the compensating wage differential? What is the wage in physically demanding jobs? (10 points)

- (ii) Say that you have access to cross-section data on a representative sample of workers and estimate the following equation

$$\ln Wage = \alpha + \beta \text{PhysicallyDemaning} + \varepsilon$$

where $\text{PhysicallyDemaning} = 1$ if the job is physically demanding and 0 otherwise (α is the intercept and ε is the error term). You obtain a negative (and statistically significant from zero) estimate of β . Does this mean that you would reject the theory of compensating wage differentials? Explain intuitively. (10 points)

Question 5. (20 points)

Suppose that you access to information which quarter an individual is born, how many years the individual has been in school and the hourly wage rate at the age of 40. Due to the legislation discussed in Angrist & Krueger (1991) those who are born in the first quarter have less years of schooling on average compared to those who are born in the other quarters.

Consider the following definitions:

$QB = 1$ if the individual is born in the first quarter, 0 otherwise

$\ln Wage = \log$ hourly wage rate

$Sch =$ Years of schooling

You obtain the following estimated equation:

$$(1) \quad \ln Wage = 4 + 0.08Sch$$

$$(2) \quad Sch = 12 - 0.1QB$$

$$(3) \quad \ln Wage = 6 - 0.004QB$$

Interpret the estimated coefficients from the three regressions. You don't have to interpret the constant (i.e., the intercept). Explain why the estimated return to schooling from equation (1) is potentially biased. Calculate the causal return to schooling based on the estimations presented above (i.e., calculate the IV-estimate). Give the intuition of this strategy and why it solves the selection problem.

Question 6. (10 points)

Say that you have access to cross-section data on a representative sample of workers and estimate the following equation

$$\ln Wage = \alpha + \beta Female + \theta Sch + \varepsilon$$

where $Female = 1$ if the worker is a female and 0 if male. $Sch =$ years of schooling. You obtain a negative (and statistically significant from zero) estimate of β equal to -0.20. Interpret this estimated coefficient. Does this mean females are discriminated against? Explain!