



Stockholm
University

Department of Economics

Course name: Labour Market Economics
Course code: EC2102
Type of exam: Main
Examiner: Ines Helm and Evelina Björkegren
Number of credits: 7,5 hp
Date of exam: 11 January, 2020
Examination time: 13:00-16:00 (3 hours)
Aids: No aids are allowed.

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

Start each new question on a new answer 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.

The exam consists of 6 questions. 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.

Your results will be made available on your Ladok account (www.student.ladok.se) within 15 working days from the date of the examination.

Good luck!

Q.1) (19 points) Wages in the US have been steadily increasing since the 1980s. This question is about relating this increase in wages to changes in female labor supply over time.

- a) Using the basic static model of individual labor supply, discuss both graphically and explain in your own words how this increase in wages can have contributed to the increase in female labor force participation in the US over time.
- b) What impact will the increase in the wage rate have on hours worked (of females already working in the 1980s)? Discuss all relevant effects. Which effect dominates if hours worked increase following an increase in the wage rate? You do not need to draw a graph for this answer.

Q.3) (19 points) Many countries impose payroll taxes on employers and employees to fund the social security system.

- a) Assume that a country wants to impose a payroll tax of 1\$ on employers for every employee-hour hired. What is the effect on both wages and employment in competitive labor markets? Both explain in your own words and illustrate your reasoning graphically. Clearly mark all the important points in your graph.
- b) Would it be better to tax workers instead? Why or why not? What determines how much of the payroll tax is shifted to the workers? Only give a short explanation here, a graph is not needed.

Q.3) (12 points) State whether the following statements are true or false. Shortly explain your answer in 1-2 sentences.

- a) The life cycle model of labor supply predicts that (unexpected) transitory increases in the wage rate lead to an increase in hours worked.
- b) The cross-elasticity of factor demand measures how sensitive the demand for a particular input factor (e.g. employment) is to changes in its own price.

Q.3) continued

- c) Labor Demand is more elastic in the long run than in the short run
- d) In a model with a perfectly competitive firm, if two input factors (e.g. employment and capital) are perfect complements, then a change in wages leads to a large substitution effect.

Q.4) (15 points) Consider a worker who chooses between a risky job and a safe job. Let x denote riskiness of the job and $x = 2$ if the job is risky and $x = 0$ if it is safe. Suppose utility is given by $U = w - 2x$. w_0 is paid by the clean job, and w_1 by the dirty job. $w_1 = 20$.

- a) What is the compensating wage differential?
- b) What problem estimating the compensating wage differential does *Duncan and Holmlund (1983)* solve and how? Explain intuitively in words, no formal proof or regression equations required.

Q.5) (15 points) Consider a government that contemplates extending the mandatory school system from nine years to ten years in primary school. You are now asked to give recommendation about the implementation and are thinking about estimating the model:

$$Y_i = b_0 + b_1 sch_i + e_i,$$

where Y_i is the outcome (e.g. wage) of individual i , and sch_i is the years in school of the same individual. e_i is an error term.

- a) Describe in words why estimating this model can give rise to omitted variable bias.
- b) Explain the research design that *Meghir and Palme (2005)* use in their paper to estimate b_1 .

Q.6) (20 points) Suppose that a firm hires female and/or male workers to maximize profits. Men and women are equally productive, so that the firm's output is $q = f(E_F + E_M)$, where E_F and E_M denote the number of female and male workers, respectively. Suppose that $w_F < w_M$ so women are cheaper to hire. Suppose firms are discriminatory against women, so that they perceive the wage of women to be $w_F(1 + d)$, where $d > 0$ is the discrimination coefficient.

- a) Show the condition that determines what kind of workers the firm hires.
- b) Show how profits change with the discrimination coefficient and explain what is going on.
- c) How would you go about to estimate gender discrimination in a hiring process (callback rates)? Explain in words how you would set up such a study and why.