



**Stockholm
University**

Department of Economics

Course name: Labour Market Economics
Course code: EC2102
Type of exam: Main
Examiner: Ines Helm and David Seim
Number of credits: 7.5 credits
Date of exam: Monday June 3rd, 2019
Examination time: 09:00-12:00 (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) (24 points) Suppose a country wants to introduce an earned income tax credit (EITC) for single mothers with children. It plans to implement it in the following way:

- For earnings below 8,000\$ a tax credit of 20 percent can be claimed
 - For earnings between 8,000\$ and 16,000\$, the full tax credit can be kept
 - For earnings above 16,000\$ the tax credit is phased out at a 10 percent tax rate
- a) Show graphically how the budget constraint changes after the introduction of the earned income tax and explain your reasoning. Clearly mark all the important points in your graph.
- b) Using the basic static model of individual labour supply, what does the model predict will happen after the introduction of the earned income tax to
- i. labour force participation of single mothers with children
 - ii. labour supply of single mothers with children that earn below 8,000\$ without the EITC (but are working)
 - iii. labour supply of single mothers with children that earn between 8,000\$ and 16,000\$ without the EITC
 - iv. labour supply of single mothers with children that earn above 16,000\$ without the EITC.

You do not have to answer this question using graphs, but shortly explain your answer in each case.

Q.2) (14 points) Nada Eissa and Jeffrey Liebman analysed an extension of the EITC that took place in 1987 in their study titled “Labor Supply Response to the Earned Income Tax Credit”.

- a) How did the study exploit the extension of the EITC? That is what was the empirical strategy? What is the main assumption when using this strategy? Do you think that this assumption was satisfied in the case here?
- b) What did the study find? Is this in line with the predictions made by the model used in Q.1)?

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

- a) 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.
- b) In a simple model of labor demand with a competitive firm that uses capital and labor in production, the effect of a reduction in wages on the amount of capital used in production is ambiguous in the long run.

- c) In a perfectly competitive model, the effects of introducing a payroll tax on equilibrium employment and wage outcomes depend on whether the government decides to tax the firm or the worker.
- d) In a perfectly competitive model, if migrants and natives are complements in production, then an inflow of migrants to the labor market will increase natives employment and wages.

Q.4) (20 points) Saez and Veall (2005): ``*The Evolution of High Incomes in Northern America: Lessons from Canadian Evidence*'' study how income inequality has changed over time in Canada.

- a) Describe their findings about the evolution of income inequality over time.
- b) A key finding is that labor earnings have become more important over time as a share of total income among top-earners. How do the authors explain this finding?
- c) Can we interpret their explanation as causal evidence? Motivate your answer.
- d) Describe the three arguments for why economists think that redistribution of resources from rich to poor may be a good idea.

Q.5) (10 points)

- a) Suppose the annual interest rate is 10%. Would you prefer obtaining 1000 SEK today or 1150 SEK in a year from now?
- b) Assume that you are 18 years old and deciding whether to go to college or start working. If you work, you will earn a constant wage w_{HS} throughout your career. If you study, you pay tuition for four years and then earn a constant wage w_{COL} .
 - (i) Show the condition under which you choose to study.
 - (ii) Explain how changes in tuition, in the interest rate and in the wage differential ($w_{COL} - w_{HS}$) would affect your decision.

Q.6) (20 points) Suppose that a firm hires native and/or immigrant workers to maximize profits. Natives and immigrants are equally productive, so that the firm's output is $q = f(E_N + E_I)$, where E_N and E_I denote the number of native and immigrant workers, respectively. Suppose that $w_I < w_N$, so immigrants are cheaper to hire. Suppose firms are discriminatory against immigrants, so that they perceive the wage of immigrants to be $w_I(1+d)$, where d is the discrimination coefficient.

- a) Show the condition that determines whether a firm hires only natives, only immigrants or a combination.
- b) Derive the profit-maximizing conditions for firms depending on their discrimination coefficient.
- c) Show how profits change with the discrimination coefficient and explain what is going on.