



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:** Thursday 31 May 2018  
**Examination time:** 3 hours (09:00-12:00)

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

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.**

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The exam consists of 6 questions. One can get 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.

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

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**Good luck!**

Q.1) (25 points)

- a) In a perfectly competitive model of the labor market, how does immigration affect total employment, wages and native workers employment level in the short run assuming that migrant and native workers are perfect substitutes? Both explain in your own words and illustrate your reasoning graphically.
- b) Explain what happens to native wages and employment in the long-run in this scenario. Focus in particular on the role that capital plays in the long run. (no graph needed)
- c) Give a real world example where natives and migrants are potentially substitutes and a second example where natives and migrants may rather be complements.

Q.2) (15 points) In a study titled *Labor Supply Shocks, Native Wages, and the Adjustment of Local Employment*, Christian Dustmann, Uta Schönberg and Jan Stuhler analyse the impact of immigration on wages.

- a) What policy did the study exploit to estimate the effect of immigration on wages?
- b) How did the study exploit this policy? That is, which features of the policy did the study use to estimate the causal effects of immigration on native wages?
- c) What did the study find? Is this finding the consensus in the literature estimating the impact of immigration on wages?

Q.3) (10 points) State whether the following statements are true or false. Shortly explain your answer in 1-2 sentences.

- a) In the basic model of individual labor supply, an increase in the wage rate will increase an individual's hours worked.
- b) In the basic model of individual labor supply, a "take-it-or-leave-it" cash grant that individuals only get if they do not work will reduce labor force participation.
- c) 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.
- d) The marginal product of labor measures average output per worker.

Q.4) (20 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) Illustrate mathematically and in words why estimating this model can give rise to *Omitted variable bias*.
- b) If you had no financial or ethical restrictions, explain what research design you would use to uncover  $b_1$ ?
- c) Explain the research design that Meghir and Palme (2005) use in their paper to estimate  $b_1$ ?

Q.5) (10 points) In a study titled *The Effect of Wealth on Individual and Household Labor Supply: Evidence from Swedish Lotteries*, Cesarini, Lindqvist, Notowidigdo and Ostling study how wealth influence the decision to work.

- a) Explain their research design and findings.
- b) Discuss advantages and disadvantages of that design.
- c) Do they find support for the hypothesis that households act as one utility-maximizing unit? Motivate your answer.

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 firms 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  $d$  is the discrimination coefficient.

- a) Show the condition that determines whether a firm hires only women, only men 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.