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:	**Wednesday, 22nd of August, 2018**
Examination time:	**3 hours (09-12)**

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.**

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.

Your results will be made available on your "My Studies" account (www.mitt.su.se) within 15 working days from the date of the exam.

Good luck!

Q.1) (22 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$ for every employee-hour hired on the workers. What is the effect on both wages and employment in competitive labour markets? Both explain in your own words and illustrate your reasoning graphically.
   b) Assume now that intstead the payroll tax of 1$ is imposed on the employer. In which case will the tax be completely shifted to the worker? Again explain in your own words and illustrate that case graphically.

Q.2) (18 points) In a study titled *Payroll Taxes, Firm Behavior, and Rent Sharing: Evidence from a Young Workers' Tax Cut in Sweden*, Emmanuel Saez, Benjamin Schoefer and David Seim analyse the impact of a reduction in payroll tax on wages and employment.
   a) What policy did the study exploit to estimate the effect of payroll taxes on wages and employment?
   b) How did the study exploit this policy? That is, what empirical strategy did the authors use to estimate the effect? What is the main assumption made when using this strategy?
   c) What did the study find? Is this finding in line with what the competitive model of the labor market would predict? If not, name *one* alternative explanation that may be explaining the results.

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, if leisure is a normal good, an increase in non-labor in-come will reduce hours worked
   b) In the basic model of individual labor supply, the introduction of a proportional tax rate on labor income will decrease hours worked.
   c) 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.
   d) In the long run a competitive firm chooses the optimal level of output by setting MC=p.

Q4. (10 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 $U=u(w,x)=w - x^2$.
   a)   What is the compensating wage differential?
   b)   Does the compensating wage differential differ depending on the wage in the safe job?

Q5. (20 points) Suppose you are choosing a career path with two options. Either you study before entering the labor market, or you enter the labor market

directly. You only live in two periods. If you study, you incur tuition fees of $10,000 in the first period, but earn $100,000 in the second. If you enter the labor market directly, you earn $10,000$ in the first period and $70,000 in the second.

a) Let the interest rate between these periods be given by r. State the condition under which you will study.
b) Derive the r-value that makes you monetarily indifferent between studying and entering the labor market directly.
c) Using this model, give examples of policies that the government can use to boost higher education.
d) Suppose you use data to regress earnings on years in school. Explain why it is difficult to interpret the coefficient on schooling causally?

Q6. (20 points) Consider a researcher interested in the causal effect of class size in primary school on educational attainments. The research strategies he is contemplating are (i) regression-control; (ii) randomization; (iii) difference-in-differences and (iv) regression-discontinuity. Explain the workings of each method along with the identification assumptions that enable causal inference. Discuss advantages and problems with each method.