Department of Economics

Course name:	**Labour Market Economics**
Course code:	**EC2102**
Type of exam:	**Regular**
Semester:	**Fall 2012**
Examiner:	**Peter Skogman Thoursie**
Number of credits:	**7,5 credits (hp)**
Date of exam:	**Thursday, January 17, 2013**
Examination time:	**3 hours (09:00-12:00)**

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

For main question 1 use *only* **the** *multiple-choice answer sheet* **provided by the invigilators to record your answers.**

Use one cover sheet per main question. 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.**

You may answer in Swedish or English. Please give short and precise answers!

The exam consists of 5 main questions where each main question includes several sub questions. The points for each sub question are stated after each such question. The exam can yield 100 points in total. For the grade E 45 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) on Thursday the 7th of February at the latest.

Good luck!

Question 1 – Labour supply (20 points)

Check off (*kryssa för*) the right alternative

a) Assuming that consumption and leisure are normal goods, then hours worked will fall when the wage increases if (**4 points**):

      A. The income effect dominates the substitution effect.
      B. The substitution effect dominates the income effect.
      C. If the income and substitution effect move in the same direction (i.e., if they are of the same sign).
      D. If the income and substitution effect move in the opposite direction (i.e., if they are of the opposite sign).
      E. The wage increase is accompanied by an increase in prices.

b) An increase in non-labour income while holding the wage rate constant (**4 points**):

      A. Rotates the budget line out along the consumption axis.
      B. Rotates the budget line out along the leisure axis.
      C. Rotates the budget line in along the leisure axis.
      D. Rotates the budget line in along the consumption axis.
      E. Shifts the budget line up (in the direction of the consumption axis) while maintaining the same slope.

c) According to the intuition underlying the substitution effect, a person will (**4 points**):

      A. Reduce hours worked when her wage increases, because she wants to substitute leisure for work.
      B. Reduce hours worked when her wage increases, because she wants to substitute work for leisure.
      C. Increase hours worked when her wage increases, because leisure has become relatively more expensive than consumption.
      D. Increase hours worked when her wage increases, because leisure has become relatively less expensive than consumption.
      E. Increase both her consumption and her hours of leisure.

d) What would a person do if the market wage is less than his or her reservation wage? (**4 points**):

      A. The person will enter the labour market.
      B. The person will work as much as possible.
      C. The person will work more hours as the wage falls further.
      D. The person will be unemployed.
      E. The person will not participate in the labour force.

e) When the wage was $10 per hour, a group of workers supplied 30 hours of work per week on average. The wage then increased to $12 per hour, and the same group of workers supplied 33 hours of work per week on average. What is the elasticity of labour supply for this group of workers? (**4 points**)

      A. 0
      B. 0.5
      C. 1.0
      D. 1.5
      E. 2.0

Question 2 – Compensating wage differentials (15 points)

Suppose all workers have the same preferences represented by

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

where w is the wage and x is the proportion of the firm's where all jobs involve risks of getting injured. There are only two types of jobs in the economy, a non-risky job ($x = 0$) and a risky job ($x = 1$). Let w_0 be the wage paid by the non-risky job and w_1 be the wage paid for doing the risky job. If the non-risky job pays SEK 100 per hour, what is the wage in risky jobs? What is the compensating wage differential? (**15 points**)

Question 3 – Human capital (25 points)

a) If there two groups of individuals, one with high and one with low ability, but with equal discount rates. Explain why the human capital theory predicts that they will have different schooling levels. Explain why the comparison of the average wage differential between the two groups is a biased estimate of the return to schooling. (**10 points**)

Suppose that you access to information which quarter an individual is born, how many years the individual has been in school and the 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
> $Wage$ = hourly wage rate
> Sch = Years of schooling

The following estimations are estimated

$Sch = 12 – 0.2QB,$ (1)

$ln(Wage) = 6 – 0.01QB$ (2)

b) How do you interpret the numbers (coefficients) in front of quarter of birth in the two equations (1) and (2)? 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 potentially solves the ability bias. (**15 points**)

Question 4 – Discrimination (20 points)

Suppose years on the labour market (LEXP, labour market experience) is the only variable that affects earnings. The equations for the hourly wage rates of male (m) and female (f) workers are given by:

$$w_m = 112 + 5\text{LEXP}$$

and

$$w_f = 90 + 4\text{LEXP}.$$

On average, men have 20 years of labour market experience and women have 15 years of labour market experience

a) What is the male-female average wage differential in the labour market? (**3 points**)
b) Using the Oaxaca decomposition, calculate how much – in terms of precent – of this wage differential is due to discrimination? (**12 points**)
c) Explain why this might be a poor measure of discrimination. (**5 points**)

Question 5 – Labour Demand and Unemployment (20 points)

a) Explain using search theory how a decrease in the unemployment benefit level can affect search behaviour and what the implications are for the unemployment level. (**5 points**)

b) Assume that a firm chooses the number of workers by maximizing profits. Further assume that the firm operates under perfectly competitive product and factor markets implying that price and the wage are perceived as constants from the firm's perspective. Derive the first order condition from the firm's short run maximization problem and show that labour demand is decreasing in the wage. (**10 points**)

c) In the Card & Kruger (1994) paper they find empirically that an increase in a minimum wage increased demand for labour. Explain intuitively how a raise in the minimum wage would affect labour demand if the market for labour is characterized by perfect competition. Explain intuitively how a labour market characterized by monopsony could explain the result find in the Card & Krueger (1994) paper. Do you think that the fast food restaurant industry that card & Kruger is likely to be characterised by a monopsony? (**5 points**)