UNIVERSITY OF OSLO
DEPARTMENT OF ECONOMICS

Exam: **ECON4715 – Labor Economics**

Date of exam: Thursday, November 27, 2014 **Grades are given: December 18, 2014**

Time for exam: 09.00 a.m. – 12.00 noon

The problem set covers 6 pages (incl. cover sheet)

Resources allowed:

- No resources allowed (except if you have been granted use of a dictionary from the Faculty of Social Sciences)

The grades given: A-F, with A as the best and E as the weakest passing grade. F is fail.

Final Exam ECON4715 – Labour economics

This exam has 5 questions, with in total 17 sub-questions.
When answering the questions on the exam you should be brief and to the point!
Make sure to write clearly. Difficult to decipher answers will not be counted!

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1. In this question you have to indicate whether you think the statement is true or false and explain why. You do not get any points if you only state whether the statement is true or false.

   (a) A decline in the importance of unions is expected to increase the skill wage differential.

   (b) Statistical discrimination arises because employers get disutility from hiring minority workers.

   (c) If the rate of return to skills is higher in the source country than in the destination country, high skilled workers are more likely to migrate to the destination country than low skilled workers.

   (d) Use the information in the following Table that shows the productivity and cost of schooling for high- and low-productivity workers.

Type of worker	**Present value of lifetime productivity**	**Cost of a year of schooling**
low-productivity	450 000	20 000
high-productivity	600 000	10 000

   If high-productivity workers obtain 8 years of schooling in order to signal they are high-productivity workers, this will result in a separating equilibrium where both type of workers are paid their present value of lifetime productivity.

2. The theory of compensating wage differentials

   (a) Draw two indifference curves in Probability of Injury (x-axis) versus Wage (y-axis) space, for two individuals where one is more risk averse than the other but who are otherwise identical (explain the shape of the indifference curves and which one is which).

   (b) Draw an iso-profit curve in Probability of Injury (x-axis) versus Wage (y-axis) space, and explain its shape.

   (c) Illustrate the wage and job characteristics the two workers in (a) will end up with in equilibrium. Explain the intuition of the outcome.

3. This question is about: Hunt, J. (1999). Has Work-Sharing Worked In Germany? Quarterly Journal of Economics 114(1). pp. 117-148

   Hunt is interested in how a standard hours reduction (contractual number of hours per week given wages) affects firms' labor demand.

   (a) Suppose that for every hour worked an employee is payed a wage w up to standard hours h_s, and overtime wage $w_o = (1+p)w > w$ for hours worked beyond that. Assume furthermore that there are fixed cost F involved in hiring. Also assume that the firm chooses non-zero overtime hours ($h^* > h_s$). What is the marginal cost for hiring a new worker for h^* hours, and what is the marginal cost of achieving a same increase in hours using the existing workforce?

   (b) How does this policy affect the employment (number of workers employed) of the firm in the short run?

   (c) Discuss how this policy affects the weekly hours worked per employee in the long run.

   (d) Explain how the paper tries to answer this question, and briefly describe the main result.

4. This question is about: Niederle and Vesterlund (2007). Do Women Shy Away From Competition? Do Men Compete Too Much? Quarterly Journal of Economics, 122(3). pp. 1067–1101.

   Niederle and Vesterlund conducted a laboratory experiment in which participants had to add up sets of five two-digit numbers under different compensation schemes. Participants in the experiment were seated in rows and informed that they were grouped with the other people in their row. A group consisted of 2 men and 2 women. The participants had to perform 4 tasks in the following order, one of the tasks was randomly selected and the participant was paid the money he or she earned in this task:

   Task 1 - Piece rate: Participants were given the five minute addition task, they could earn 50 cents per correct answer**.**

   Task 2 - Tournament: Participants were given the five minute addition task. The participant that solved the most problems in the group could earn 2 dollar per correct answer, the other participants earned nothing.

   Task 3 - Choice of compensation scheme for future performance: Before performing the five minute addition tasks, the participants had to select whether they wanted to be paid according to a piece rate or a tournament.

   Task 4 - Choice of compensation scheme for past piece-rate performance: Participants did not have to perform the five minute addition task. Participants had to select which compensation scheme they wanted to apply to their past piece-rate performance of task 1.

   The following Table shows results of the paper.

PROBIT OF TOURNAMENT-ENTRY DECISION (TASK 3)

	Coefficient (p-value)		
	(1)	(2)	(3)
Female	−.379	−.278	−.162
	(.01)	(.01)	(.05)
Tournament	.015	−.002	−.009
	(.39)	(.90)	(.42)
Tournament–piece rate	.008	−.001	.011
	(.72)	(.94)	(.44)
Guessed tournament rank		−.181	−.120
		(.01)	(.01)
Submitting the piece rate			.258
			(.012)

Dependent variable: Task-3 compensation scheme choice (1-tournament and 0-piece rate). The table presents marginal effects evaluated at a man with thirteen correct answers in the tournament and twelve in the piece rate, who submits to the tournament, and with a guess of one in the Task-2 tournament. Guesses of four are eliminated, resulting in a sample of thirty-eight women and thirty-nine men.

(a) A potential explanation for differences in labor market outcomes between men and women is that women perform worse in a competitive environment compared to men. Do Niederle and Vesterlund (2007) find evidence for this explanation?

(b) Interpret the estimate in row (1)-column (1) in the table above.

(c) In task 4 participants select which compensation scheme they want to apply to their past piece-rate performance of task 1. In column (3) of the Table above, Niederle and Vesterlund include the choice made in task 4 as control variable ("Submitting the piece rate"). Interpret the coefficient in column (3)-row (1) and explain what conclusion Niederle and Vesterlund draw on the basis of the results in column (3).

5. This question is about: Guido Imbens, Donald Rubin and Bruce Sacerdote (2001). Estimating the Effect of Unearned Income on Labor Supply, Earnings, Savings and Consumption: Evidence from a Survey of Lottery Players. American Economic Review, 94, 778-794.

Imbens, Rubin and Sacerdote investigate the effect of unearned income on earnings, consumption, and savings. They use an original survey of people playing the lottery in Massachusetts in the mid-1980's to analyze the effects of the magnitude of lottery prizes on economic behavior. The following Table shows results of the paper.

[redacted]—ESTIMATES OF MARGINAL PROPENSITY TO EARN (MPE) OUT OF UNEARNED INCOME: INTERACTIONS WITH PRIOR LABOR MARKET HISTORY, SEX, AGE, EDUCATION, AND TIME SINCE WINNING

Outcomes	Baseline MPE[a]	Prior earnings zero[b]	Female[b]	$55 < \text{Age} \leqq 65$[b]	Age > 65[b]	College[b]	Years since winning[b]
Average post-lottery earnings	−0.124	0.209	0.002	−0.167	−0.001	0.037	−0.010
	(0.054)	(0.084)	(0.057)	(0.070)	(0.090)	(0.061)	(0.022)
Year 0 earnings	0.032	0.014	−0.015	−0.094	−0.004	−0.027	0.006
	(0.029)	(0.045)	(0.031)	(0.038)	(0.049)	(0.033)	(0.012)
Year 1 earnings	−0.096	0.108	0.057	−0.204	−0.045	0.043	0.001
	(0.047)	(0.073)	(0.050)	(0.061)	(0.079)	(0.053)	(0.019)
Year 2 earnings	−0.119	0.175	0.020	−0.215	−0.039	0.086	−0.025
	(0.056)	(0.088)	(0.060)	(0.073)	(0.095)	(0.064)	(0.024)
Year 3 earnings	−0.120	0.225	−0.058	−0.178	0.003	0.040	−0.004
	(0.061)	(0.097)	(0.066)	(0.081)	(0.104)	(0.070)	(0.026)
Year 4 earnings	−0.133	0.158	0.005	−0.100	0.099	0.009	−0.024
	(0.065)	(0.103)	(0.070)	(0.085)	(0.110)	(0.074)	(0.027)
Year 5 earnings	−0.138	0.235	−0.000	−0.127	0.032	−0.001	−0.002
	(0.069)	(0.108)	(0.074)	(0.090)	(0.116)	(0.078)	(0.029)
Year 6 earnings	−0.137	0.355	−0.009	−0.177	−0.057	0.045	−0.009
	(0.070)	(0.110)	(0.075)	(0.091)	(0.118)	(0.079)	(0.029)

Notes: The sample consists of the 194 winners with a yearly prize less than or equal to $100,000. All regressions include the yearly lottery prize, the lottery prize interacted with an indicator for zero earnings prior to winning, an indicator for women, an indicator for age between 55 and 65 at the time of winning, an indicator for age over 65 at the time of winning, an indicator for some college, and years since winning, as well as the large set of control variables (years of education, age, dummies for sex, college, age over 55, age over 65, small set of controls plus number of tickets bought, year of winning, earnings in six years prior to winning, dummies for positive earnings in six years prior to winning, dummy for working at the time of winning).

[a] Reports the marginal propensity to earn out of unearned income for the baseline individual, a man who won in 1986, who had positive earnings in the year prior to winning, with no college, less than 55 years old at the time of winning.

[b] The estimates are those for the coefficients corresponding to the interaction with yearly lottery prize.

(a) On the basis of the neoclassical model of labor-leisure choice, what is the expected effect of winning a prize in the lottery on labor supply?

(b) Is it important that Imbens, Rubin and Sacerdote (2001) exploit variation in lottery prizes to estimate the effect of unearned income on labor supply? Explain why or why not. What is the critical assumption in the paper?

(c) Interpret the result in column (1)-row (1) in the Table. Do Imbens, Rubin and Sacerdote find that leisure is a normal good?