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Department of Economics
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WS 2008/2009

First Exam in the Course:

Labor Economics

25 February 2009

You have to provide answers to three of the following four problems. If you answer all problems only the answers to the first three problems 1, 2, and 3 will count.

Your answers have to be in English. If you are a Diploma student, your answers can be in English or in German. In case, please mark at the beginning of the exam, that you are a 'DIPLOMA' student.

The maximum number of credits is 90. To pass the exam you have to obtain 45 credits.

The exam lasts 90 minutes.

You may use a non–programmable calculator.

Please write your name and your immatriculation number ("Matrikelnummer") on top of all answer sheets.

Use a new answer sheet for each problem.

The exam consists of **4** pages including the cover page. Please check the completeness.

This is a closed–book exam.

Good Luck!

Please provide answers to three of the following four problems. On the answer sheets, mark clearly which problems you solve.

1.) Consider a monopoly union with a right-to-manage assumption.

a) Describe and illustrate the model. Use both graphs and formal derivations. Interpret the first order condition of the problem. Show that the solution of the model is not pareto–optimal. What does this mean economically? [20 credits]

b) Consider an increase in the value–added tax. How do employment and the wage respond? [10 credits]

[30 credits]

2.) Consider an economy with a labor force comprising 30% females and 70% males. Assume that both male and female employees lose their jobs at an annual rate of 10%. Also, on average unemployed individuals find a new job with probability 50% per year (note that this job finding rate differs between males and females). Furthermore, the unemployment rate among females is 2 percentage points higher than among males. Assume that all these rates are the same among all males and all females, respectively, in the labor force but they may differ between the group of males and the group of females.

a) Calculate the job finding rate separately for males and females. Calculate the unemployment rates separately for males and females as well as for the entire labor force. What is the aggregate rate of job losses. If necessary, make further reasonable assumptions. [15 credits]

b) What is the relationship between the aggregate job loss rate, the aggregate job finding rate, and the aggregate unemployment rate? Is it the same relationship as for the rates among females and males, respectively? [8 credits]

c) Describe roughly the trend and the cyclical movement of the aggregate unemployment rate as well as the size of inflows into unemployment and outflows from unemployment for West Germany since 1980. [7 credits]

[30 credits]

3.) Consider human capital investment.

a) Anne's wage-schooling locus for college is given in the table. Derive the

Years of college	**Earnings**
1	\$26,000
2	\$34,000
3	\$38,000
4	\$40,000

marginal rate of return schedule. When will Ann quit college if her discount rate is 7 percent? [8 credits]

b) Suppose there are two types of persons, high-ability and low-ability. A particular diploma costs a high-ability person \$8,000 and costs a low-ability person \$20,000. Firms wish to use education as a screening device where they intend to pay \$25,000 to workers without a diploma and \$K to those with a diploma. In what range must K be to make this an effective screening device? Explain. (Make further assumptions if necessary.) [8 credits]

c) Card (1993) uses the proximity to college as an instrument to estimate the returns to schooling. Why is it necessary to use an instrument in this regression? Do you think the instrument Card uses is convincing? Explain. What do you think of using the education of the mother as an instrument in this context? What about using the last digit of the individual's social security number (hint: this is a random number)? [14 credits]

[30 credits]

4.) Consider labor supply.

a) John receives 30 Euro each day from his grandmother. He is indifferent of not working or working one hour per day and receiving a total income of 38 Euro per day or working two hours and receiving a total income of 48 Euro per day. What is John's reservation wage assuming discrete hours choices? Now John receives in addition a few Euros per day from his aunt. How does John's reservation wage change? Use a graphical argument for your answer. [12 credits]

b) The OECD Employment Outlook 2005 includes a chapter on In-work benefits. Give a (fictitious) example of such a policy to explain what this means. Describe the incentive problem to which In-work benefits might be a remedy. What aspects should be considered when designing in-work benefits? [18 credits]

[30 credits]

END OF EXAM