

Problem set 3

ECON-A2200 Principles of Economics II

Deadline: Wednesday November 24 at 23:59

Instructions: Return your answers in a **single pdf-file through MyCourses** (*lastname_firstname_PII_PS3.pdf*). Make sure to include your name and your student number in your answers file. You may draw the graphs by hand or with any software (excel, power point, matlab, word,...). In whichever way you draw them, remember always to label the axes, and any point and line or curve that you draw. Add some description/explanation. If solutions are handwritten, make sure that your handwriting is easy enough to read, the picture is of good quality, the pages are labelled, in the right order and orientation.

1. Consider the competitive labour market model from the lectures. The government introduces a wage subsidy in order to encourage employers to hire more workers. The subsidy is paid to firms based on the number of workers they employ, i.e. they receive a fixed subsidy amount for each worker they employ.

a. Using the supply and demand diagram, show what happens to the wage received by the workers, the wage cost paid by the employers and the number of workers employed. Also, indicate in the figure the total cost of the subsidy to the government. (I recommend that you draw the figures by hand and then scan them.)

b. Compare the wage and employment results you obtained in a. to the results of a wage subsidy discussed in Unit 9 (the labour market model). Are they similar?

c. Now, compare the wage subsidy to a minimum wage when the minimum wage is set at the same level as the wage that the workers earn after the wage subsidy is introduced. What are the main differences of these two programs from the workers' point of view and the government's point of view?

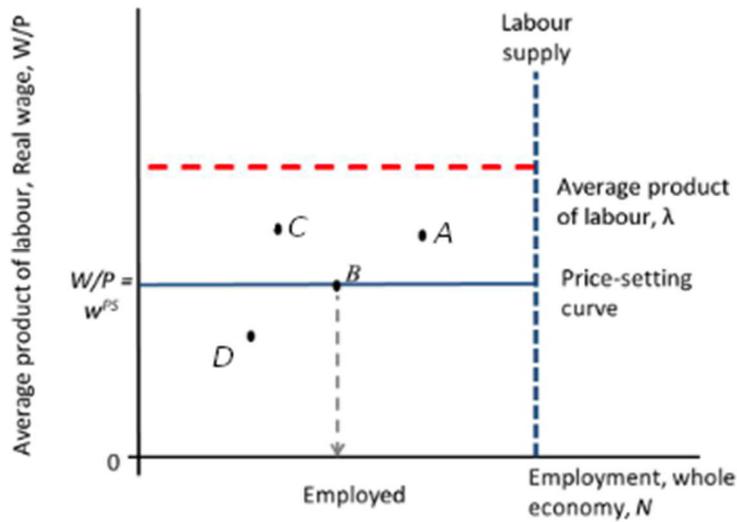
2.

a. How might the observation that the productivity trend since early 1800's has been upwards in Europe and that the trend of the unemployment rate has not been downward be reconciled with the WS-PS/"labour discipline" model? (Tips: think what is the implication of productivity growth to PS curve, and how WS curve must have shifted at the same time to explain the observation.)

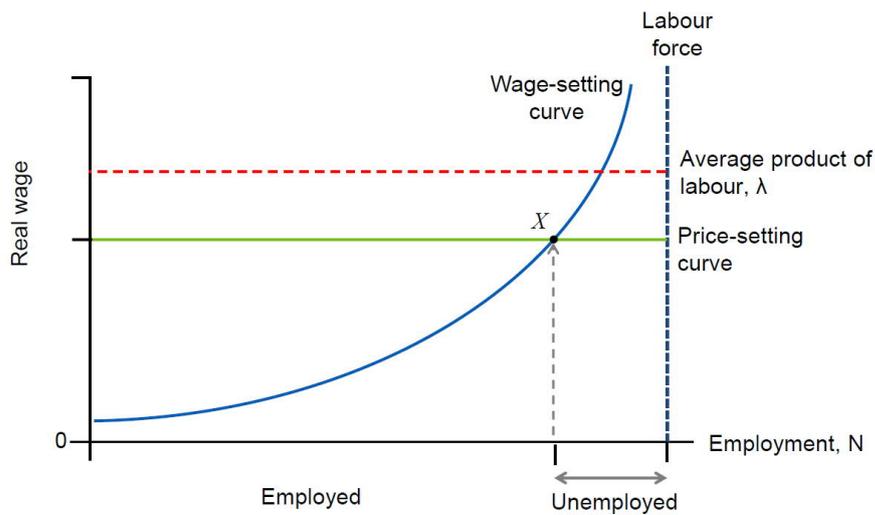
b. Assume that government introduces new penalties against employers who hire illegal immigrants. Suppose that illegal aliens, who tend to be less-skilled workers, are complementary input in production with native workers. What will happen to the wage of native workers if the new penalties for hiring illegal aliens are imposed?

3. The figure depicts the price-setting curve. Assume that the average product of labour λ is given. Based on this figure, answer true or false to the following statements and explain your answer briefly.

- At D, the markup is below the firm's profit-maximising level.
- To go from A to B, the firm would be raising its price.
- The firm's profit is higher at A than at D.
- C is not a feasible choice for a firm.



4. Below is a key figure of the labour market model that we considered in the lectures.



a. Before considering the figure, remember that in the labour discipline model, the unemployed are no different from the employed (except for their bad luck, in a sense). Imagine you are an employer, and one of the unemployed comes to you and promises to work at the same effort level as your current workers, but at slightly lower wage. How would you reply? Does your reply help explain why unemployment must exist in a Nash equilibrium?

b. Now consider the figure and explain why point X in the figure is a Nash-equilibrium. (Include the definition of Nash-equilibrium in your answer.)

c. Assume that workers become more worried about losing their jobs at any given level of employment. Now, using the figure above, explain what happens to unemployment.

d. Let's go back to the original position and assume that the liberalization of the goods market reduces the monopoly power of the existing firms. Explain what happens to unemployment and real wages in the economy.