

Homework #4

Questions 2, 3, and 4 are taken from Borjas.

(1) Suppose the market for construction laborers in the Capital Region is summarized as follows:

$$\begin{array}{ll} \text{Supply:} & w = 100 + 0.04E \\ \text{Demand:} & w = 600 - 0.01E \end{array}$$

where w is the weekly wage in dollars and E is the number of laborers.

(i) What are the equilibrium wage, w^* and employment level, E^* .
 (ii) What are the elasticity of demand and the elasticity of supply at the equilibrium values?

(iii) Suppose Shoddy Construction Inc. has 20 laborers. If Shoddy were to pay \$1 per week more than w^* how many additional laborers would show up to wanting to work for them? What does this mean for the elasticity of supply that Shoddy faces.

(iv) The government has decided to introduce a pay-roll tax assessed (i.e. levied) on firms. Firms have to pay \$50 per week for every laborer they employ. What is the new effective demand curve in the market for laborers? What are the new equilibrium wage and employment level? Compared with the situation before the tax was put in place, how much of the tax is effectively paid by the workers and how much is paid by the firms?

(v) Now suppose the government decides instead to make the workers pay the tax out of their wages. Each worker gets \$50 deducted from his or her pay check each week. What is the new labor supply curve for laborers in the capital region? What is the new equilibrium wage and employment level? Now who effectively pays what proportion of the tax?

(vi) Compare your answers to (iv) and (v) to those that came out of the example we covered in class (about the market for secretaries). What causes the difference in the distribution of who effectively pays the tax?

(2) Suppose the wage rate dropped while the employment level went up. Which curve - supply or demand - must have shifted and in which direction to produce the effect. Assume the labor supply is upward sloping and demand is downward sloping.

(3) Suppose a firm is a perfectly discriminating monopsonist. The government imposes a minimum wage on this market. What happens to wages and employment.

(4) What happens to wages and employment if the government imposes a payroll tax on a nondiscriminating monopsonist? Compare the responses in the monopsonistic market to the responses that would have been observed if the market were competitive.