

Chapter 15: Factor market

1. Suppose that a firm's labour demand and supply functions are of the form:

$$L_d = 10 - 0.5W$$

$$L_s = -5 + W$$

- a. Find the equilibrium wage (W) and employment (L) (assuming both product and labour markets are competitive)
- b. Suppose that government institutes a minimum hourly wage of \$12
 - i. Find the new profit maximizing level W and L .
 - ii. With the help of a diagram analyze the consequences of this minimum wage law in the labour market.
- c. Assuming monopsony in the labour market and competition in the product market, calculate the profit maximizing level of W and L
- d. Suppose that government institutes a minimum hourly wage of \$10
 - i. Find the new profit maximizing level of W and L
 - ii. With the help of a diagram analyze the consequences of this minimum wage law in the labour market.

Hints:

- a. Competitive equilibrium implies demand = supply

$$L_d = 10 - 0.5W$$

$$L_s = -5 + W$$

b. $L = 5$ units, $W = 5 + 5 = \$10$

when $w = \$12$, demand = 4 units, supply 7 units, unemployment = 3 units (i.e., minimum wage creates unemployment when markets are competitive)

c. Monopsonist's equilibrium

Demand = marginal cost of labour

(L_s represents average cost of labour)

$$L_d = 10 - 0.5W \Rightarrow w_d = 20 - 2L$$

$$L_s = -5 + W \Rightarrow w_s = 5 + L \Rightarrow MCL = 5 + 2L$$

$L = 3.75$ units, wage = \$8.75

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with \$10 minimum wage, $L = 5$ units employment.

"in case of monopsony"

∴ Minimum wage could create employment.

