Slope of iso profit curve

$$\frac{dP}{dQ} = \frac{-\bar{\pi}}{Q^2} = -\left(\frac{P-AC}{Q}\right)$$

$$\bar{\pi} = PQ - C(Q)$$

$$\frac{\bar{\pi}}{Q} = P - AC$$

slope of dd curve

$$P(Q) = f(Q)$$

$$\varepsilon = -dQ/dP \cdot \frac{P}{Q}$$

$$\frac{dP}{dQ} = -\frac{1}{\varepsilon} \cdot \frac{P}{Q}$$

At profit maximum

slope of dd curve = slope of iso-profit curve

$$\Rightarrow -\frac{1}{\varepsilon}\,\frac{P}{\cancel{Q}} \; (P = 10) = -\left(\frac{P - AC}{\cancel{Q}}\right) \; (AC = 7.5)$$

$$\varepsilon = 4$$

$$w = \frac{W}{P}$$

$$= \frac{15}{10}$$

$$w = 1.5 \rightarrow \text{unit of } w$$

Price setting real wage

$$\frac{W}{P} = w$$

$$w = \lambda(1-\mu) = \lambda\left(1 - \frac{P - MC}{P}\right)$$

$$= \lambda \cdot \frac{MC}{P}$$

$$= \frac{W}{P}$$

$$\lambda \rightarrow \lambda(1-\mu) = \lambda - \lambda\mu$$

$$\lambda \rightarrow \lambda\mu$$

employee

$$\lambda = \lambda(1-\mu) + \lambda\mu$$

employer

real profit per worker per hour, π_r

$$\lambda = w + \pi_r$$

$$= \underbrace{\lambda(1-\mu)} + \lambda\mu$$

real wages = output per worker − profit per worker per hr.

$Q^* = 60$ million units

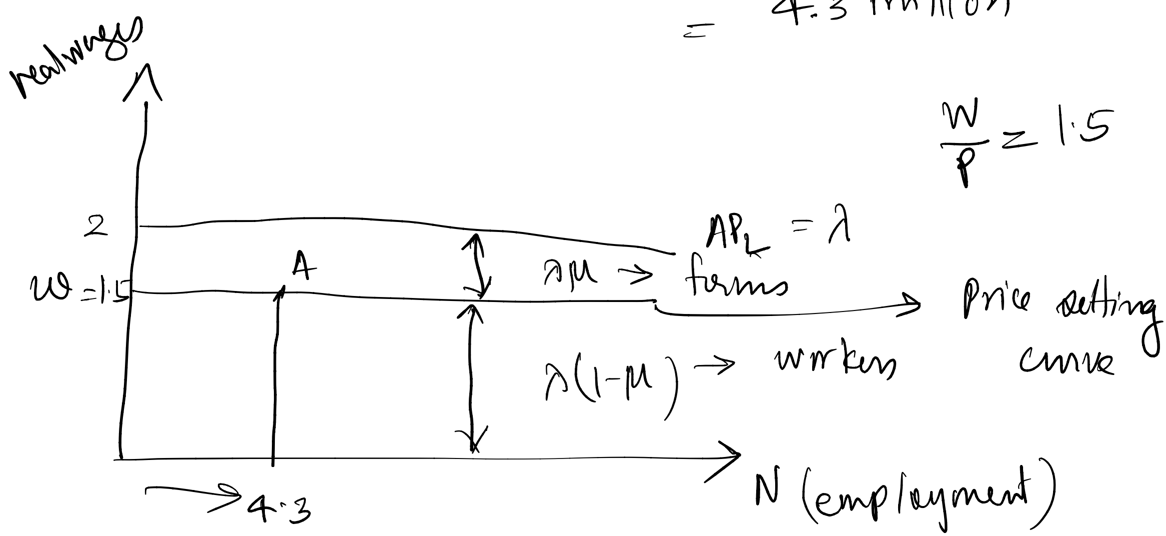
$\lambda = 2$

for a given day no. of working hrs = 7

No. of workers to produce Q^* in a day $\Big\}$ $= \dfrac{Q^*}{7\lambda}$ $\qquad \dfrac{63}{7\lambda}$

= 4.3 million

$\dfrac{W}{P} = 1.5$



① $\lambda \uparrow$s to 4

$\mu = 0.25 \qquad W = 15 \qquad \lambda = 4$

$$AC = MC = \frac{W}{\lambda} = 15/4 = 3.75$$

$$0.25 = \frac{P - 3.75}{P} \Rightarrow P = 5$$

$$\omega = \frac{W}{P} = 15/5 = 3$$

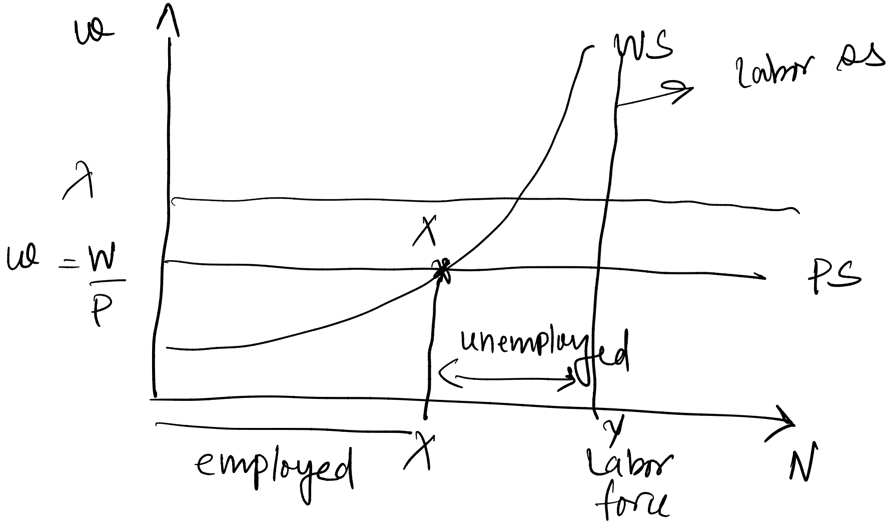
$\underbrace{\lambda\mu}_{\text{firms}}$ and $\underbrace{\lambda(1-\mu)}_{\text{employees}}$

$\mu \uparrow 0.5$

$w = \lambda(1-\mu)$ $\downarrow$

$W_0 = \$10$; $W_1 = \$15$

Price setting & Wage setting curves ⇒ Eqbm



unemployment = 0