Lecture 2: Firms and Employees

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EC566 | Macroeconomics for Business

Firm decisions

- What to produce
- How to produce
- Advertising budget
- R&D budget
- **How to set wages**
- **How much to produce**
- **At what price to sell**
- ...

"I'm certain I speak for the entire legal profession when I say that the fee is reasonable and just."

Source: New Yorker

Wage setting decision

"Labor discipline model" is a theory that characterizes the wage setting process.

Labor Discipline Model

Labor discipline model

- Workers have employment rents
  - loosing a job is costly
- Workers exert more effort if the cost of loosing a job is higher
  - The higher the wage, the costlier to lose a job
  - Exerting more effort is not desirable (disutility of work)
- Workers optimally decide on how much effort to put on
- Firms have a trade-off:
  - Higher wages induce more effort from workers, leading to more production, increasing profitability
  - Wage bill is a substantial portion of production costs, reducing profitability
- Firms optimally choose a wage rate to maximize profits

Labor discipline model, cont'd

- A sequential game between an employer and a employee:

1. The employer chooses a wage
2. Employee chooses a level of work effort after observing the wage

Notice that

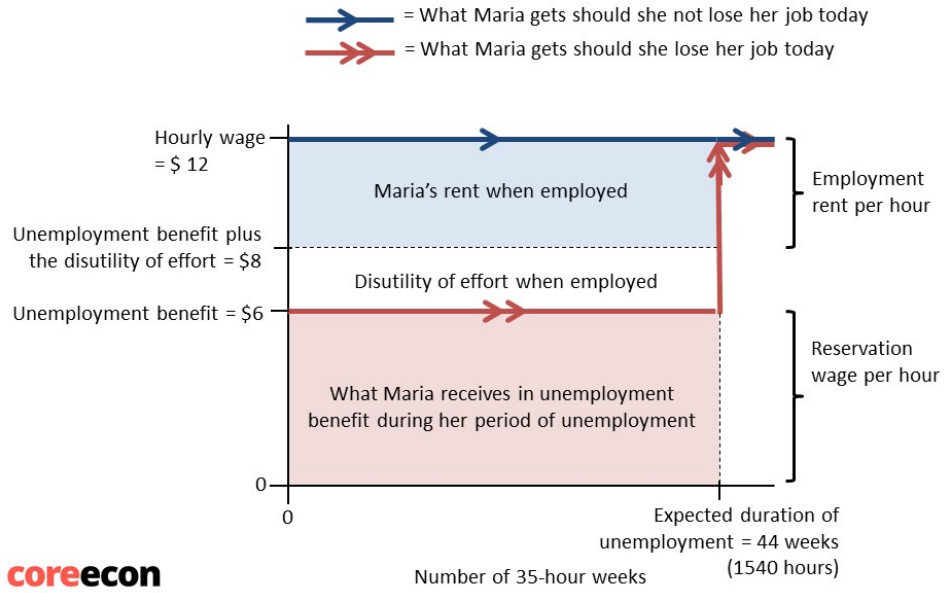
- Given wage, the employee takes into account the cost of losing a job if she does not exert enough effort
- The employer anticates behavior of the employee and sets wage accordingly to maximize its profit
- A Nash equilibrium is a set of stragies (wage offer by the firm, effort level by the employee) where no one is willing to deviate from.

Employment Rents

Read section 6.5 Determinants of the employment rent

- Cost of loosing a job
  - The difference between value of job and the next best option
- Depends on
  - wage, medical benefits, ...
  - disutility of work (function of effort),
  - unemployment benefits (if exists)
  - duration of potential unemployment
  - stigma of unemployment,
  - other available employment opportunities
- Reservation wage = value of next best option
- Employment rent = wage - reservation wage - distutility of effort

Figure 6.3. Maria's employment rent for a given level of effort and a $12 wage, in an economy with an unemployment benefit of unlimited duration.

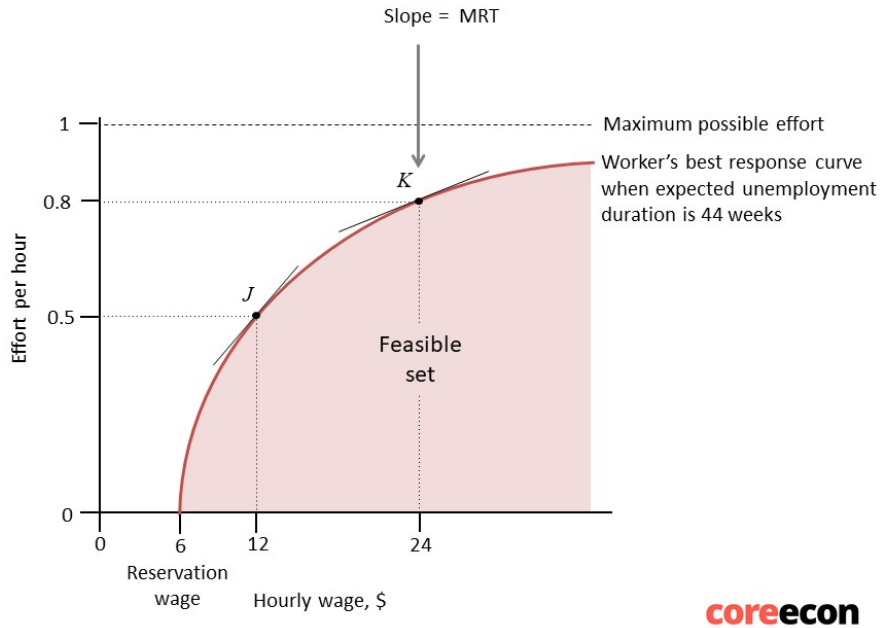


Employment rent = $(12 - 6 - 2) \times 35 \times 44 = 6160$

Worker's best response

- For a given wage offered, the optimal effort exerted by the workers
- Say wage rate = $12
  - Why wouldn't a worker exert more effort than .5?
  - Why wouldn't a worker exert less effort than .5?
- Feasible set:
  - Wage and effort pairs that a firm can get from its employees
- Slope of the best response curve = MRT
  - MRT stands for marginal rate of transformation of wages into effort

Figure 6.4. The employee's best response to the wage.



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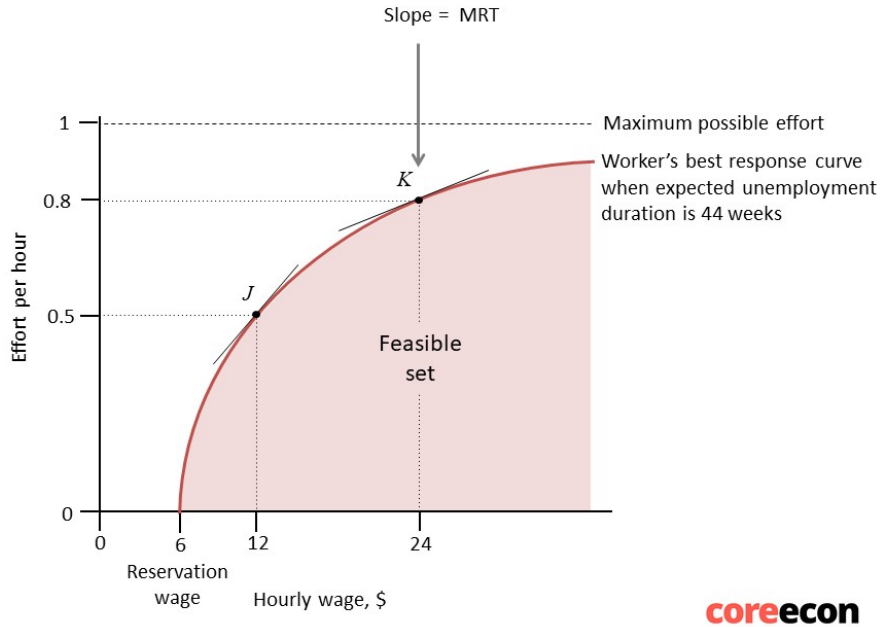
Shape of worker's best response

- Effort at the reservation wage is 0
- Effort is increasing in wage
- Best response function is concave
  - Firms need to increase wage rate more to induce more effort from workers if the initial wage is higher
  - A result of increasing marginal disutility of effort
- For more detail read Leibniz: The worker's best response function

Questions:

- What happens to the best response curve if
  - unemployment duration increases,
  - unemployment benefit decreases?

Figure 6.4. The employee's best response to the wage.



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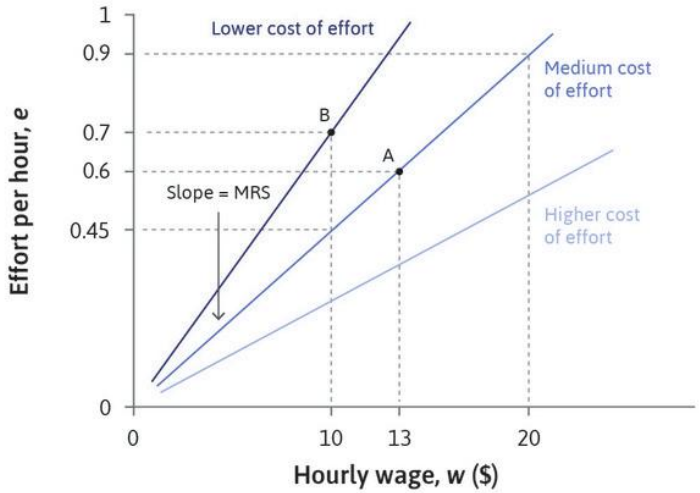
Firm's best response

- A firm's goal is to maximize profits
  - by maximizing production per employee
  - by minimizing cost of production (wage bill included)
- To maximize production, offer higher wages
  - $\Uparrow$ wages $\Rightarrow \Uparrow$ effort $\Rightarrow \Uparrow$ production
- To minimize cost, offer lower wages
- Trade-off between wages and effort

Isocost lines

How to deal with the wage effort trade-off?

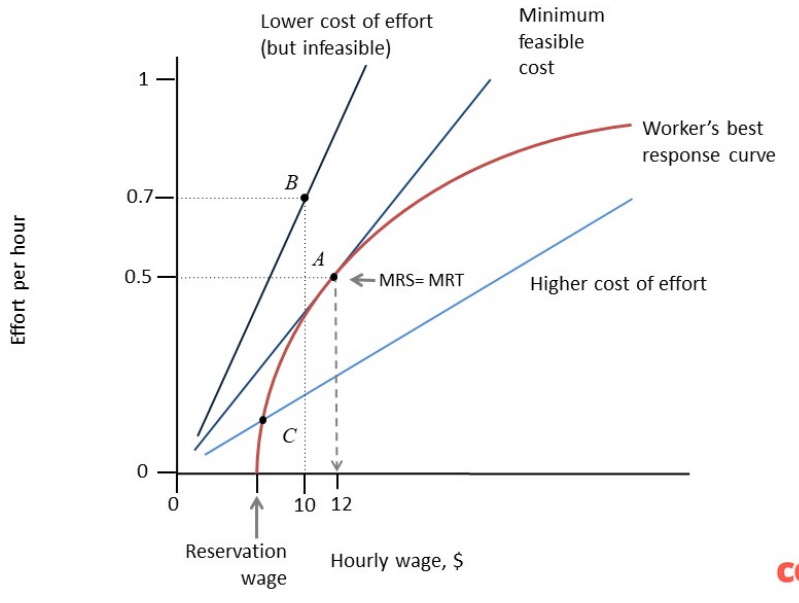
- Minimize cost of effort (wage/effort)
- Cost of effort is the same at all points on an isocost line
- Cost of effort goes down as the isocosts shifts up
- Slope of isocost curve is MRS
    - MRS: marginal rate of substitution between effort and wage



Determination of wages

- Profits are maximized at the steepest isocost line (the minimum feasible cost)
  - Equilibrium wage and effort is point A, where MRS = MRT
  - At point C, firms can increase profit by increasing wage offer (no equilibrium)
  - At any point on the left of A (where MRT=MRS), MRT > MRS
  - If MRT > MRS, a marginal increases in wage would lead to increase in effort more than the amount required to keep firm profits constant. Hence, firms will increase wages until point A.
- Efficiency wage: a wage rate greater than the reservation wage rate
  - What matters for profits is e/w, the efficiency per dollar of wage costs.

Figure 6.6. The employer sets the wage to minimise the cost of effort.



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Involuntary unemployment

> "The state of being out of work, but preferring to have a job at the wages and working conditions that otherwise identical employed workers have." – Core the Economy

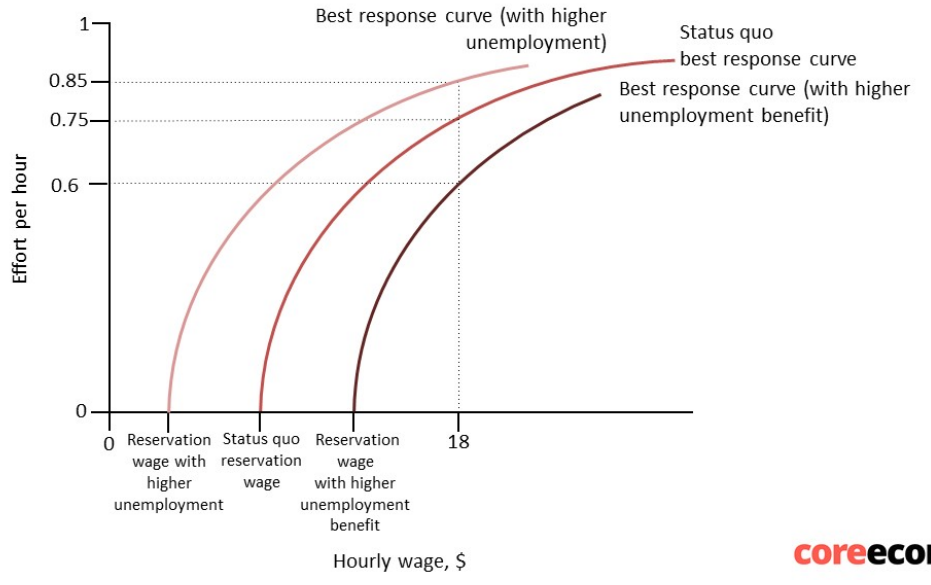
- In this model, there must be involuntary unemployment
- Suppose there is no involuntary unemployment
- Workers will not exert any effort
- Employers will not make any payment to workers who don't work

Position of workers' best response curve

The position of the best response curve depends on

- the utility from consumption enabled by the wage income
- disutility of effort
- the probability of being caught while slacking
- the duration of potential unemployment
- the reservation wage
  - depends on the level of unemployment
- Higher unemployment rate
  - lower unemployment benefits
  - longer duration of unemployment

Figure 6.7. The best response curve depends on the level of unemployment and the unemployment benefit.



As the duration of unemployment increases, the best response curve shifts to the left.

Relevance of the previous section

- Previous section was a firm level analysis.
- We assumed unemployment rate is given in our analyis.
- In the coming weeks, we will analyze the determination of unemployment rate in the economy relying on what we have learned.

Next week

Price setting firms