AP Microeconomics

Unit 5: Factor Markets

5.1 Introduction to Factor Markets

- **Derived demand**: The demand for resources is determined (derived) by the products they help produce. (Ex. The demand for carpenters is derived from the demand of homes)
- The four factor payments are:
  - Rent
  - Wage
  - Interest
  - Profit
- **Marginal revenue product (MRP)**: change in revenue when one more worker is employed; demand for labor
  - In a perfectly competitive market, it is found by multiplying MP x P (MR = P)
  - In an imperfectly competitive market, the MRP is found by multiplying MP x MR
  - If the price of a product increases, it is going to drive up the demand for labor because it increases the MRP.
  - When the marginal product of labor is equal to the average product of labor, MC is equal to minimum AVC.
  - It falls due to diminishing marginal product - each worker makes less than the previous worker due to diminishing marginal returns (lower fixed inputs and variable inputs)
  - If at least one input is fixed while the other inputs are variable, then the output will increase at a decreasing rate, since there are not enough tasks.
  - Firms hire when MRP = MFC (wage)
- **Marginal factor cost (MFC)**: The additional cost of an additional resource/worker.
- Minimum Wage: price floor
- Perfect Competition:

Image source: https://www.economicsonline.co.uk/Business_economics/Competitive_labour_markets.html

- **Monopsony**: the market structure
- **Monopsonist:** the individual who has the following firm graph:

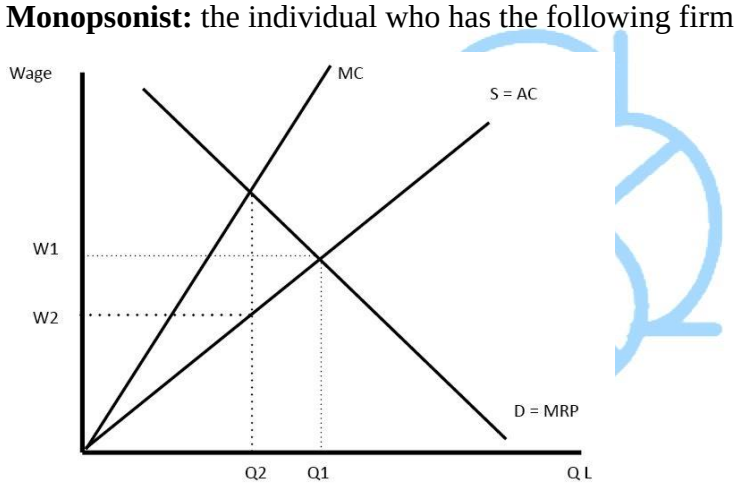


Image source: https://www.economicshelp.org/labour-markets/monopsony/

5.2 Changes in Factor Demand and Factor Supply

- What shifts the demand for labor?
    - Change in the demand for the product
    - Change in the productivity of the resource
    - Change in the price of related resources (substitutes and complements) shifts the supply for labor?
    - Number of qualified workers (immigration)
    - Government regulation/licensing

- Cultural expectations

5.3 Profit-Maximizing Behavior in Perfectly Competitive Factor Markets

- The market (or industry) is a standard supply and demand curve
- The equilibrium wage in the market establishes the wages firms pay its workers
- The supply of workers derives from the amount of workers willing to work at various wages
- The demand curve (in a perfectly competitive labor market) derives from the demand for the products produced by the workers and each individual worker's productivity when it comes to producing said products
- Firms are capable of hiring as many workers as possible at the market wage. This results in the labor supply curve for the firms as horizontal at the market wage.
- Remember, the market wage equals the cost of hiring workers so the supply curve is equivalent to the marginal resource cost (MRC)
- Any changes in the market wage will result in a shift of the firm's MRC supply
- The demand curve = marginal revenue product (MRP) of the firms workers and has a downward slope

MFC and MRP are measures used to determine the amount of output and the price per unit of a product that will maximize profits, almost like when supply equals demand. To maximize profits, firms will hire the number of workers where MFC=MRP

*MRP is the change in total production that comes from an additional unit of labor

- As changes occur in a firm's worker productivity, demand for a firm's products, and prices of said products (all change MRP), the demand curve will shift proportionally
- A firm's supply curve shifts with market wage
- The graph below depicts a decrease in the supply of workers, which causes:
  - ↑ wage
  - ↑ MRC/MFC
  - ↓ Qworkers

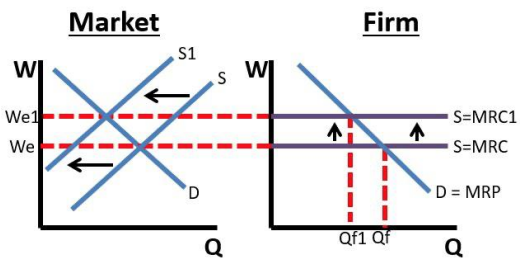


Image source: https://t.me/apresources

- Increase in MRP for the firm's laborers.
  - Because of better training for workers, implementation of new technology, etc., the MRP shifts right and the firm hires more workers
  - Firms will hire workers as long as the MRP of the last worker that was hired is ≥ the cost of hiring that worker (MRC)
    - *Firms will not hire workers when the MRC is greater than the MRP

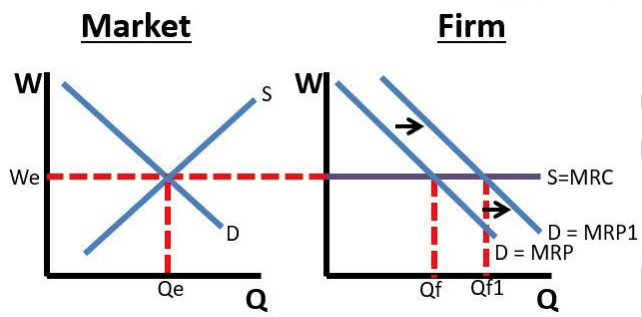


Image source: https://t.me/apresources

CALCULATING MRP

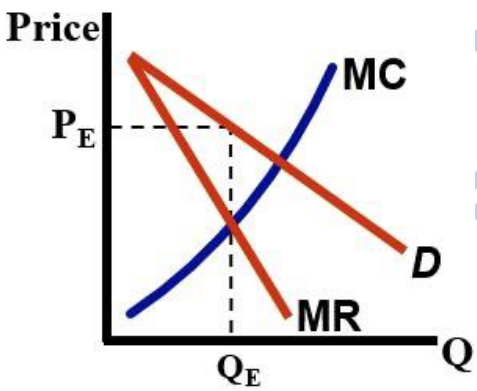
- Production costs include all expenses associated with making a product, whether it be a good or service. These costs can be broken down into either fixed costs or variable costs.
- Fixed costs are stable and continuous costs of operating a business that is not dependent on production levels. These costs generally account for overhead costs (e.g. salaries, building rental payments, utility costs, etc.)
- Variable costs are costs directly related to production levels (e.g. cost of materials used in production, cost of operating machinery)
  - Includes all the expenses of making the product as current levels.

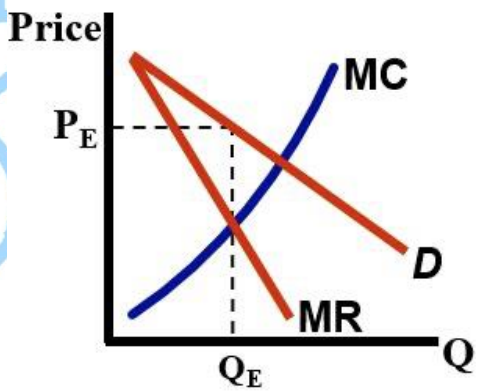
- Resource Market
  - Supply is MRC (Marginal Revenue Cost)

- Demand for Labor curve is MRP (Marginal Revenue Product)
    - Mirror Image of MC

5.4 Monopsonistic Markets

- A **monopsonistic market** occurs when there is one buyer and many sellers; the opposite of a monopoly in which there is only one seller with many buyers. In terms of labor, the buyer is the employer and the seller are the potential workers.
- Things to Remember:
    - For monopsonies, the MFC is greater than supply.
    - Monopsonistic Firms are wage makers.
    - Monopsony is an example of imperfect competition.
    - A monopsonist cannot indulge in wage discrimination.
    - Monopsonies hires workers when MRP = MRC





Monopoly Graph

Monopsony Graph

Images source: https://slideplayer.com/slide/16320687/