Chapter 14 - Labor

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Profit maximization

- **Economic profit = TR - TC**
- **Adding a worker increases TR and increases TC.**
- **A firm will add more labor if TR rises by more than TC.**
- **A firm can increase its profits by using less labor if the additional revenue generated by the last worker is less than the additional cost of adding that worker.**

VMP and MRP

- ***Value of marginal product (VMP):*** the value, at current market price, of the extra output produced by an additional unit of input.

  VMP = MP_{input} X Price of Product
  (assumes perfect competition in output market)

- **Marginal revenue product (MRP) of labor** = the additional revenue that results from the use of an additional unit of labor

  MRP = MP_{input} X MR

  (assumes imperfect competition in output market)
- **Under perfect competition VMP = MRP (WHY?)**

MRP, MFC and Profit Maximization

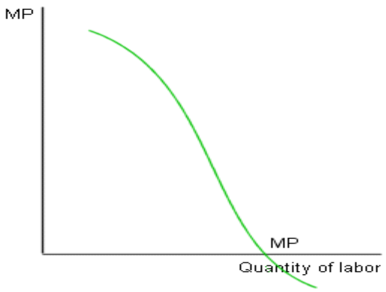
- **Marginal factor cost (MFC) of labor** = the additional cost associated with the use of an additional unit of labor

- A firm will use more labor if **MRP > MFC**
- A firm will use less labor if **MRP < MFC**
- Aa firm maximizes its profit at the level of labor use at which **MRP = MFC**

Chapter 14 - Labor

Slide of MP Curve

- law of diminishing returns



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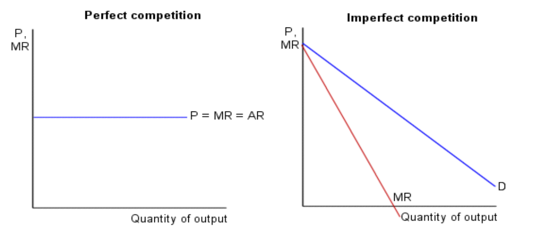
Slope of MR Curve affect MRP

- MRP = MR x MP
- MR is constant if the output market is perfectly competitive and decreasing if the output market is imperfectly competitive.



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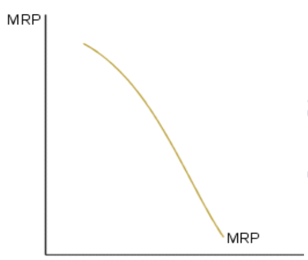
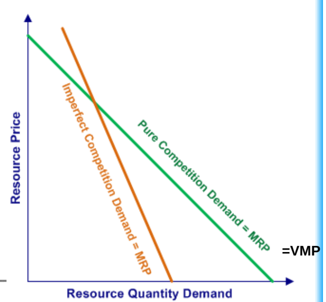
Slope of MRP Curve

- MRP = MR x MP





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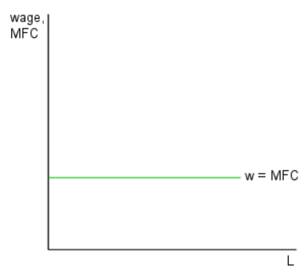
Marginal Factor Cost

- In a perfectly competitive labor market, MFC = w



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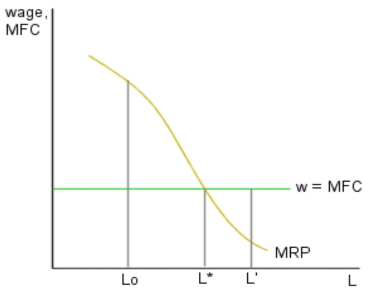
Short-run Labor Demand in a Perfectly Competitive Labor Market



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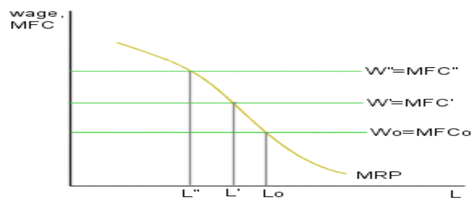
Short-run Labor Demand in a Perfectly Competitive Labor Market



Note: The market demand curve for labor is simply the horizontal summation of all of the individual firms' labor demand curves

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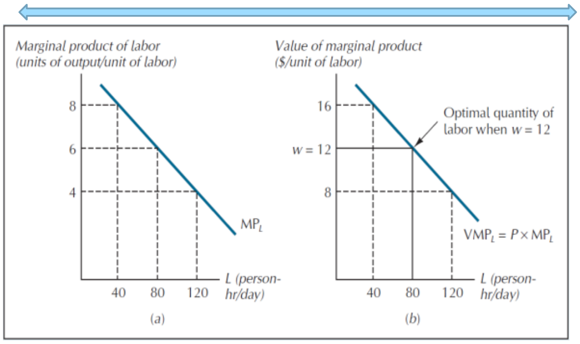
The Competitive Firm's Short-Run Demand for Labor Once Again



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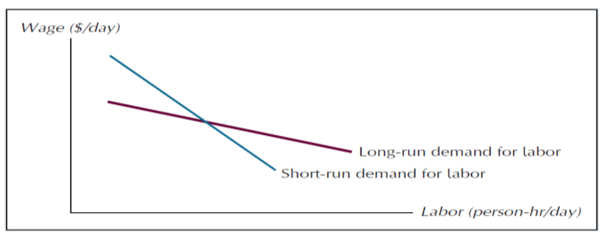
Labor Demand in the Long-run

- The firm's demand for labor will tend to be more elastic the more elastic the demand is for its product.
- The firm's demand for labor will tend to be more elastic the more it is able to substitute the services of labor for those of other inputs.



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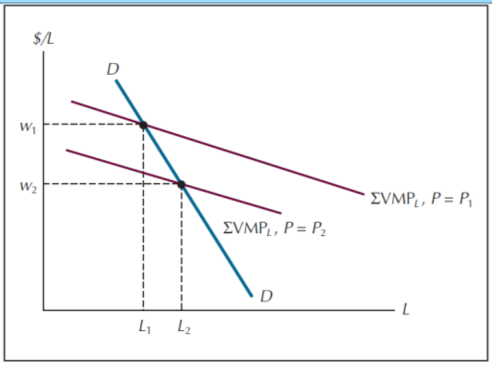
The Market Demand Curve for Labor



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Sample Problem

The XYZ Company is a monopolist for a newly-patented food supplement.

The demand for the product is P = 25 - 2Q, and the short-run production function is Q = 4L.

We want to find the firm's demand for labor.

Solve for MR and you will get MR = 25 - 4Q

We know firms hire such that W= MP_L x MR

We can see that that MP_L = 4

So W =(4) (25 - 4Q) = 100 – 16Q, but we want to find demand for labor.

We know Q =4L So W = 100 - 64L

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Monopsony

- ***Average factor cost (AFC):*** another name for the supply curve for an input.
- ***Total factor cost (TFC):*** the product of the employment level of an input and its average factor cost.
- ***Marginal factor cost (MFC):*** the amount by which total factor cost changes with the employment of an additional unit of input.
- ***The optimal level of employment for a monopsonist is the level for which MFC equal the demand for labor.***
  - For the monopsony firm wages will be lower than under competition.

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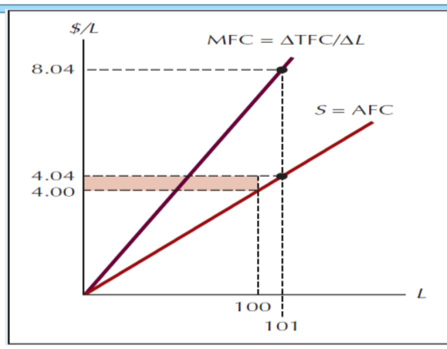
Average and Marginal Factor Cost



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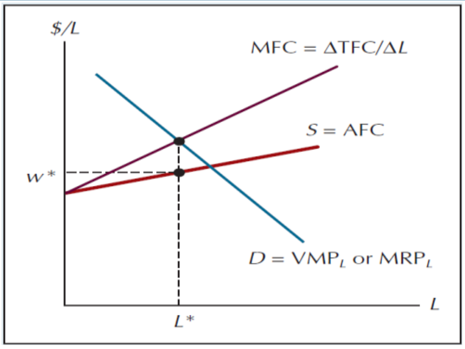
The Profit-Maximizing Wage and Employment Levels for a Monopsonist



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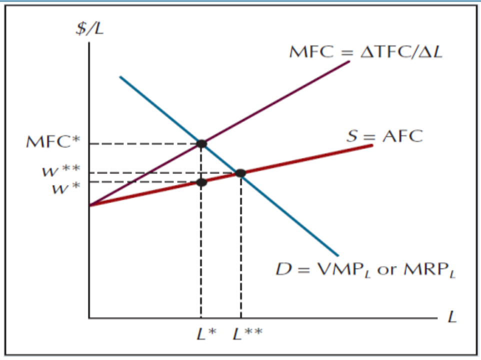
Comparing Monopsony and Competition in the Labor Market



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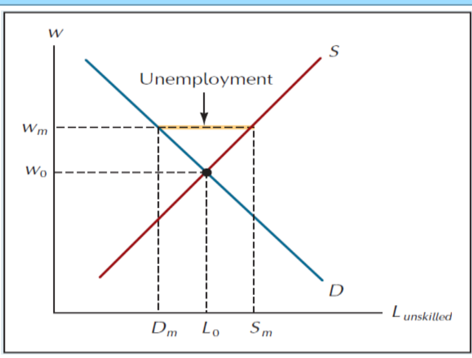
A Statutory Minimum Wage



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Discrimination In The Labor Market

- ***Customer discrimination:*** the firm's customers do not wish to deal with minority employees.
- ***Coworker discrimination:*** when some type of worker (i.e white workers) feel uneasy about working with other type of workers (i.e. blacks) and may prefer employment in firms that hire only their type.
- ***Employer discrimination:*** wage differentials that arise from an arbitrary preference by the employer for one group of worker over another.
- ***Statistical discrimination** i***Statistical discrimination** is an economic theory of racial or gender inequality based on stereotypes. According to this theory, inequality may exist and persist between demographic groups even when economic agents (consumers, workers, employers, etc.) are rational and non-prejudiced.

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Wage Variation

- It is impossible to explain the variation in wages across workers with the tools developed so far
  - we must consider the heterogeneity that exists across workers and the types of jobs they take
- **Human Capital**
  - differences in human capital translate into differences in worker productivities
    - workers with greater productivities would be expected to earn higher wages
  - investment in human capital is similar to that in physical capital, but there are differences
    - investments are sunk costs
    - opportunity costs are related to past investments

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Wage Variation

- **Compensating Differentials**
  - individuals prefer some jobs to others
  - desirable job characteristics may make a person willing to take a job that pays less than others
  - jobs that are unpleasant or dangerous will require higher wages to attract workers
  - these differences in wages are termed <u>compensating differentials</u>

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