



# Test Yourself: Labor

If the workers took a notion they could stop all speeding trains;  
every ship upon the ocean they could tie with mighty chains.  
Every wheel in the creation every mine and every mill;  
fleets and armies of the nation, would at their command stand still.

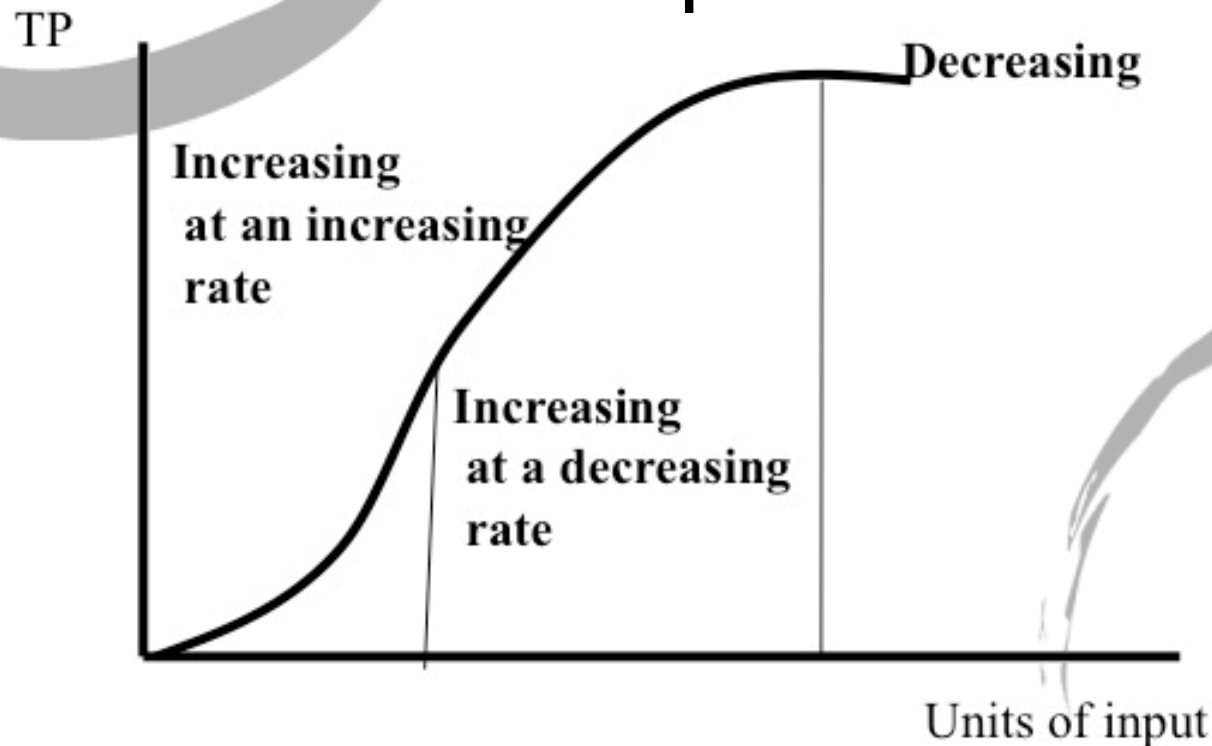
Joe Hill



What is a  
production function?



A **production function** is a graph that shows the relationship between the amount of resources employed and a firm's total product.

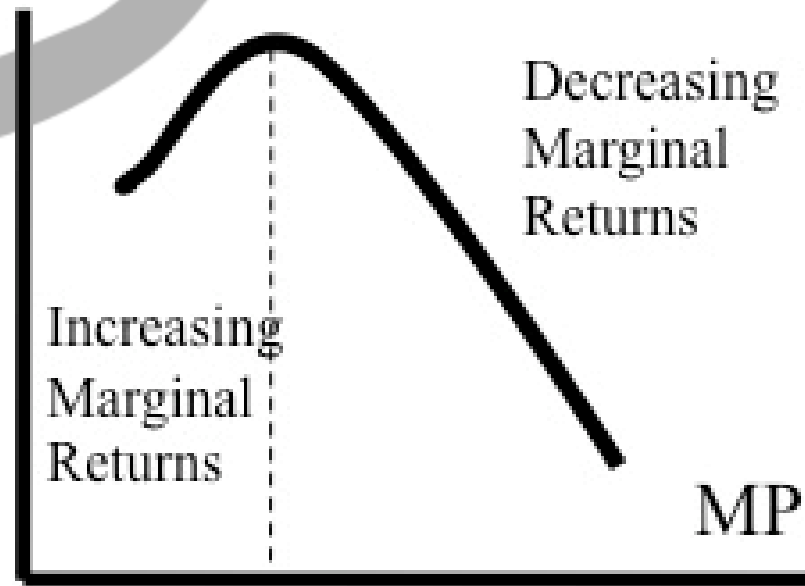




What is  
marginal product?



**Marginal product** is the change in total product that occurs when the use of a particular resource increases by *one* unit, and all other resources remain *constant*.



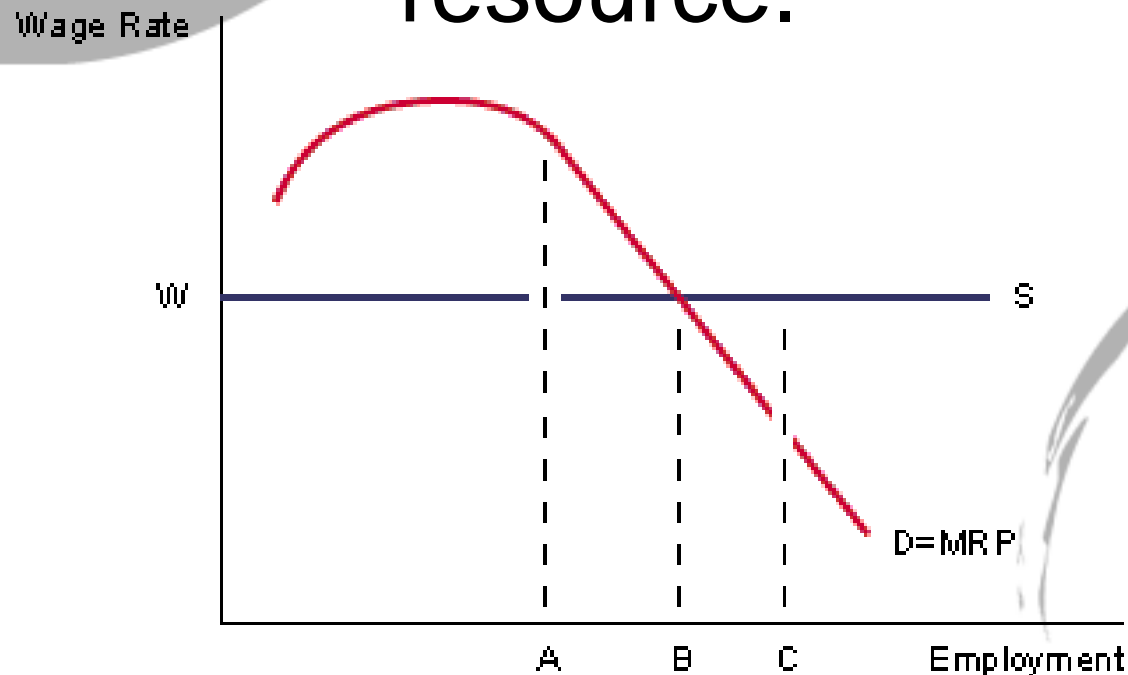
$$\text{Marginal Product} = \Delta TP / \Delta L$$



What is marginal revenue product?



**Marginal revenue product** is the increase in total revenue to a firm resulting from hiring an additional unit of labor or other variable resource.



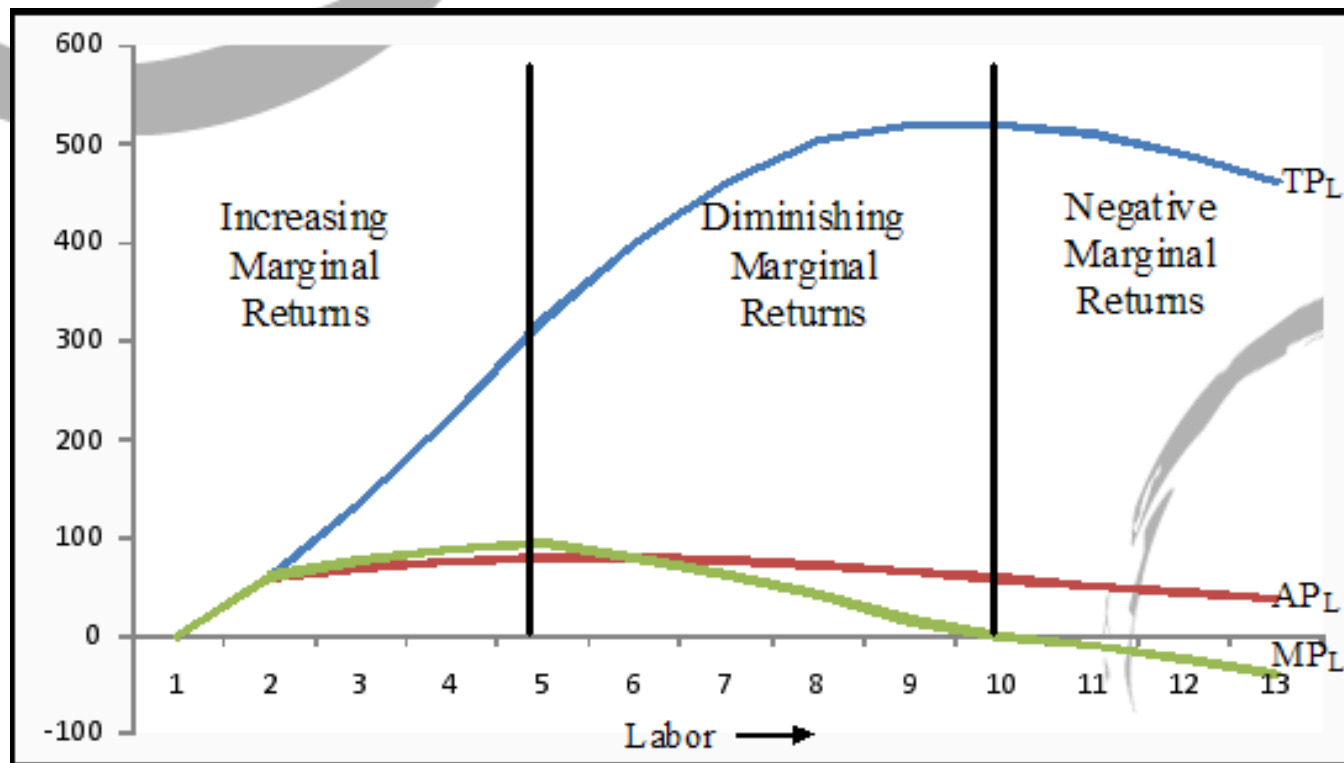


What is the law of diminishing returns?





The **law of diminishing returns** says that as more of a *variable* resource is added to a given amount of a *fixed* resource, marginal product eventually declines and could become negative.





How do we measure MRP in  
perfect competition?



In perfect competition, **marginal revenue product** is equal to the marginal product of its labor times the price of its product.

$$MRP = MP \times P$$



How many workers will a firm hire  
to maximize its profits?



A firm will continue hiring workers as long as *the last worker's MRP is greater than his/her wage.*



Why will a firm hire the last  
worker if  $MRP > W$ ?



A firm will hire the last worker if  $MRP > W$  because the *firm's revenue from hiring the last worker is greater than the amount of money paid to the last worker.*



Why will a firm not hire the last worker if  $MRP < W$ ?





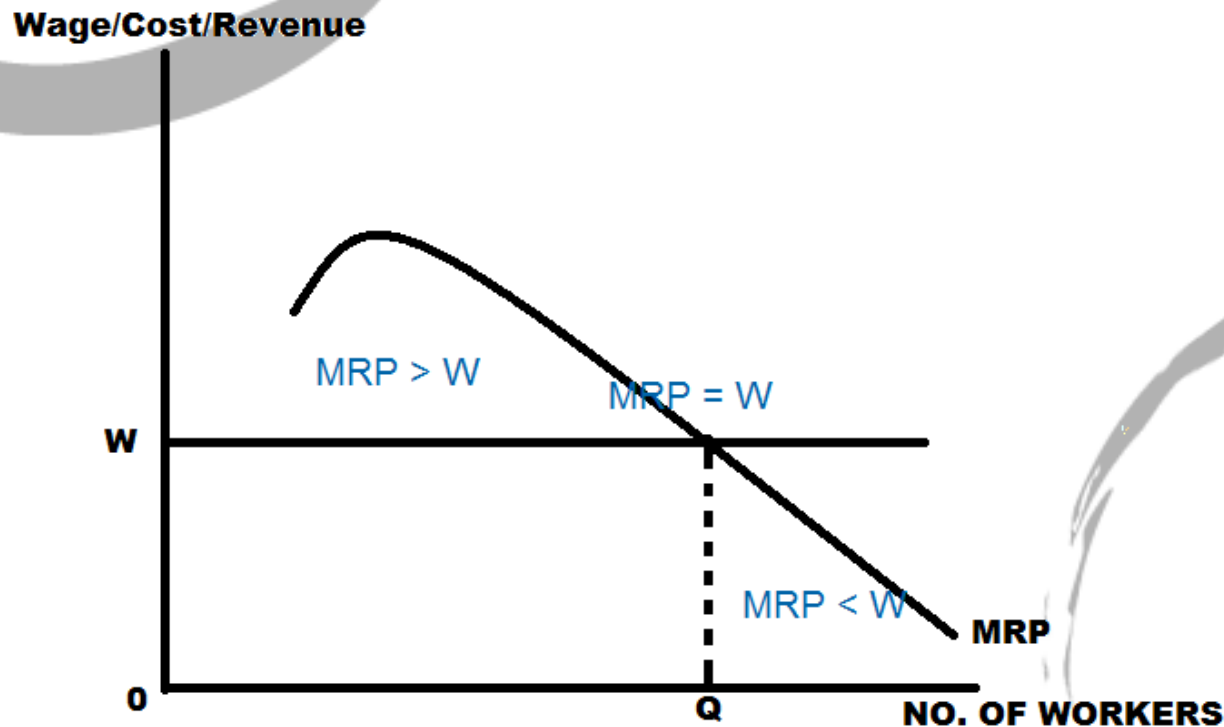
A firm will not hire the last worker if  $MRP < W$  because the *firm would be paying the last worker more money than it was making* on him/her.



What point is the firm is moving toward?



The firm is moving toward the point  
at which  $MRP = Wage$ .  
A firm will continue hiring workers up  
to that point.

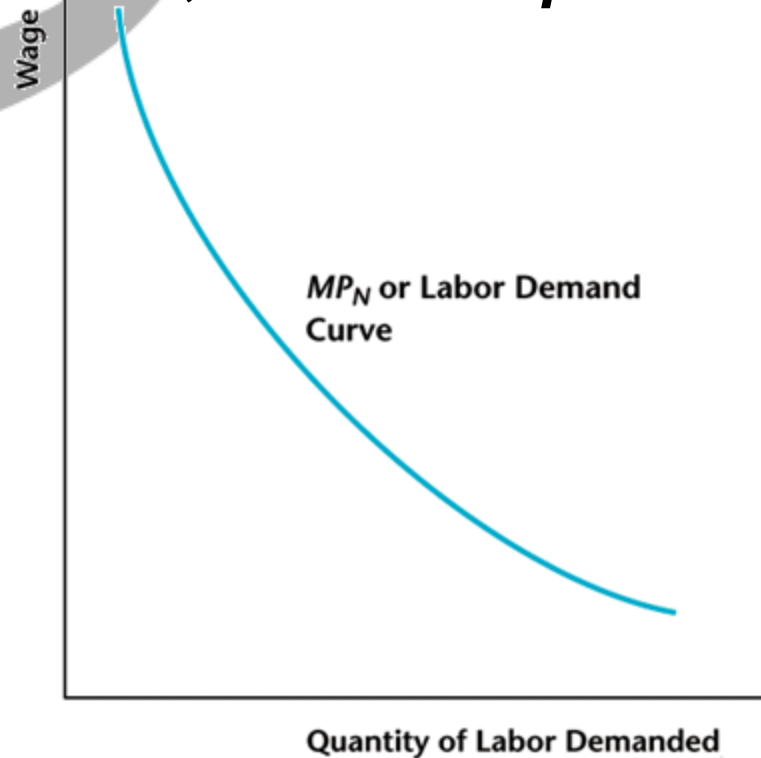




What does the demand curve for labor show?



The demand curve for labor shows the *different quantities of labor employers are willing to hire at different wage rates* in a given time period, *ceteris paribus*.

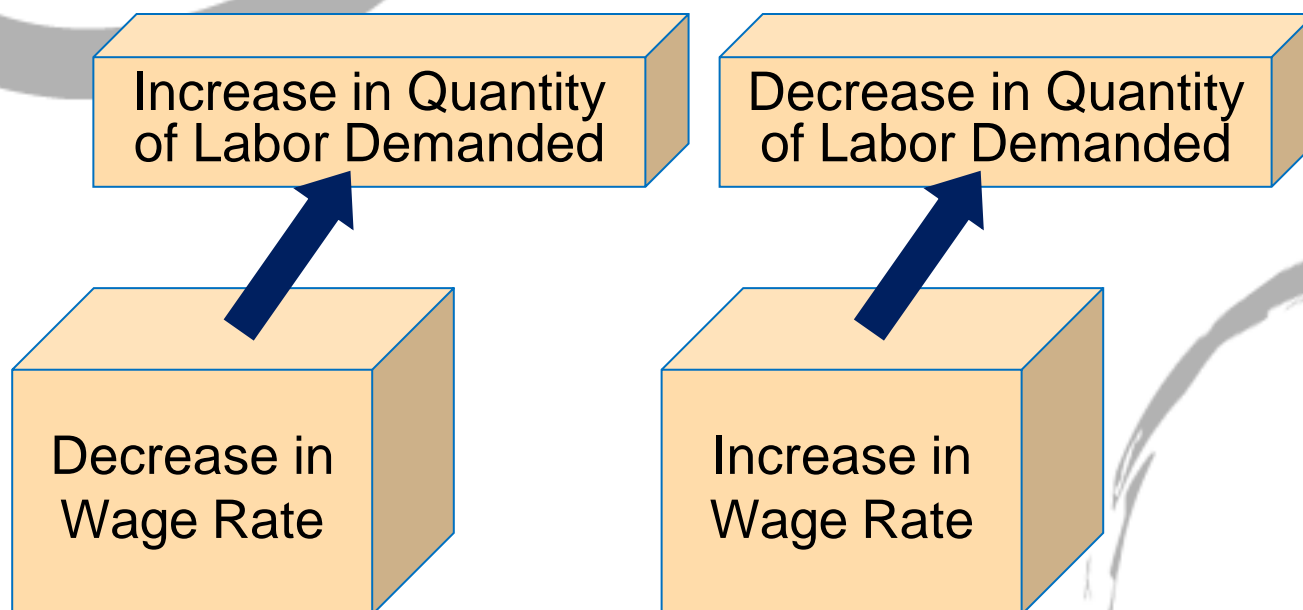




What is the demand curve for labor equal to?



The **demand curve for labor** is equal to the marginal revenue product of labor.



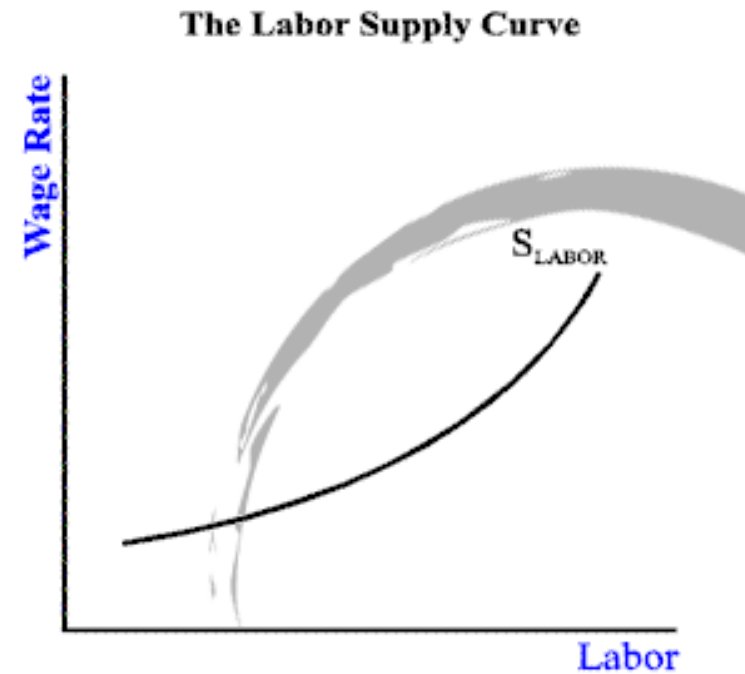
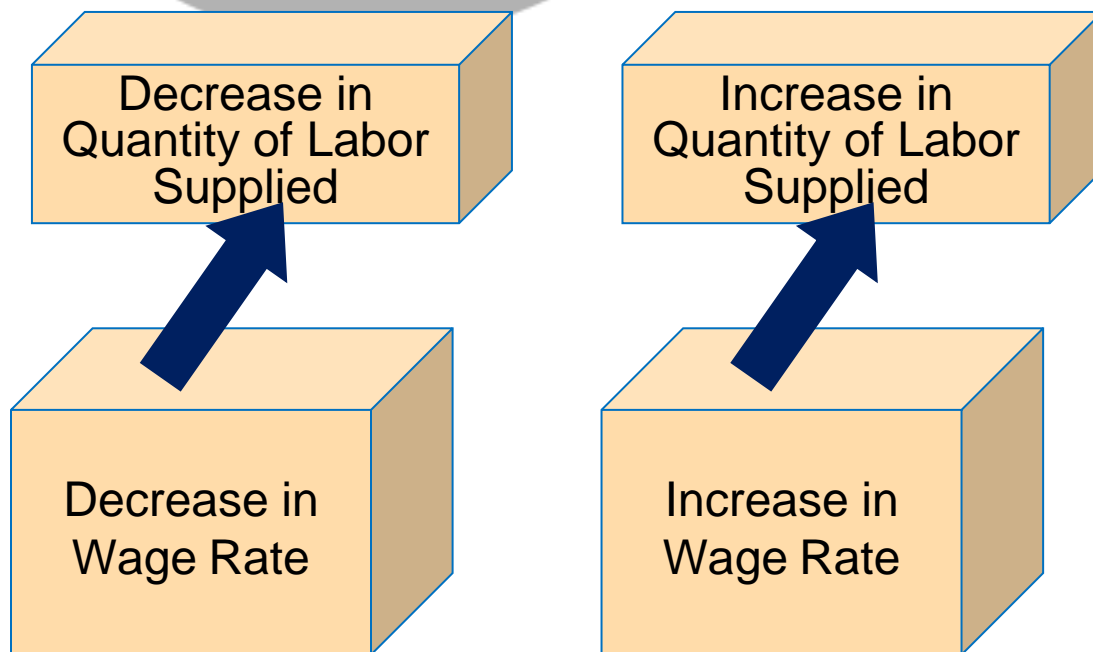


What does the supply curve for labor show?





The **supply curve for labor** shows the different quantities of labor workers are willing to offer employers at different wage rates in a given time period, *ceteris paribus*.





In a perfectly competitive market,  
what determines the level of  
wages?



In a perfectly competitive market, the level of wages is determined by the intersection of the demand for labor and the supply of labor.

That's the **equilibrium wage**.



Why is the supply curve  
horizontal at the equilibrium?



The firm can hire all the workers it wants at the equilibrium wage, so its supply curve is horizontal.



What is  
derived demand?



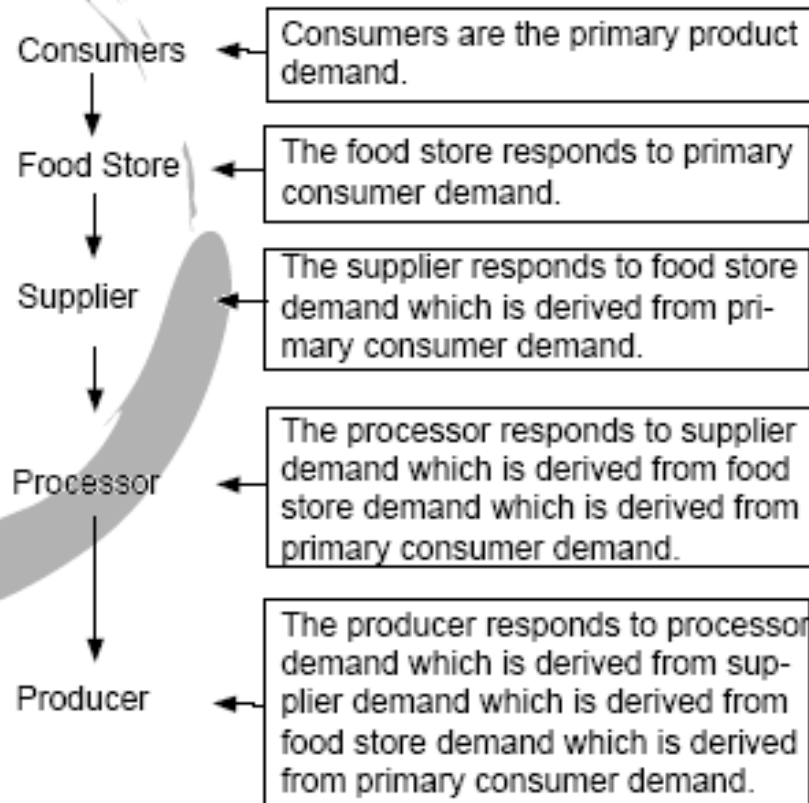
**Derived demand** is the demand for labor and other factors of production that depends on the consumer demand for the final goods and services those factors produce.



Can derived demand exist  
without a primary demand?



## Primary & derived demand



No, derived demand cannot exist without a primary demand. Derived demand only exists because there is a primary demand from the consumer. If the primary demand ceases to exist, the derived demand also ceases to exist. Likewise, if there is a shift in primary demand there will also be a shift in derived demand.



Does the perfectly competitive  
model apply to workers in  
unions?



No, the perfectly competitive model does *not* apply to workers in unions.

Unions function something like a labor cartel, restricting the number of workers in a company or industry to drive up the remaining workers' wages.



What are some examples of unions?



Some examples of unions are:

- ❑ Teamsters
- ❑ United Auto Workers
- ❑ National Education Association
- ❑ American Federation of Government Employees
- ❑ the AFL-CIO
- ❑ Air Line Pilots Association
- ❑ American Federation of Teachers
- ❑ United Auto Workers



How do unions attempt to raise wages?



Unions attempt to *raise wages* by:

- ❑ increasing the demand for labor
- ❑ decreasing the supply of labor
- ❑ exerting power through collective bargaining, featherbedding, work stoppages, strikes, etc

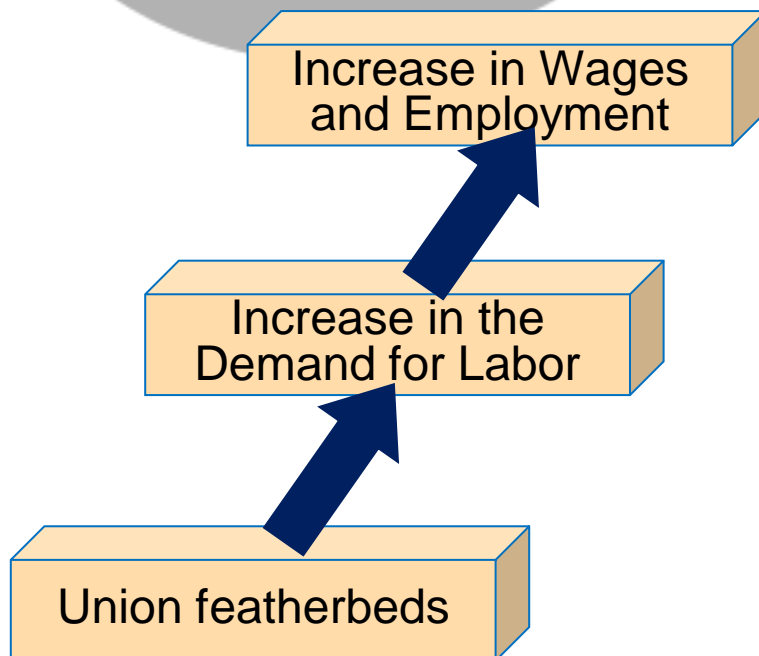


What is featherbedding?





**Featherbedding** is a term used when unions force firms to hire more workers than are required or to impose work rules that reduce output per worker.



Annual Government and Union Worker Rally



What else can unions do to  
increase the demand for labor?



Unions can increase the demand for labor by *decreasing competition from other nations*. They do this by supporting restrictions on imported goods such as quotas and tariffs and by lobbying for stricter immigration rules.



How else can unions raise  
wages?



Unions can also raise wages through collective bargaining.



What is  
collective bargaining?



**Collective bargaining** is the process of negotiation between the union and management over wages and working conditions. Unions present their argument on a particular issue, and employers must decide whether to concede to workers' demands or to present counterarguments.

The *goal* of the union in collective bargaining is to improve the status of the worker while still keeping the employer in business. The bargaining relationship is *continuous*, rather than a one-time affair.



What factors can cause a change  
in the demand for labor?





Factors that can cause a change in the *demand for labor* include:

- ❑ unions
- ❑ the prices of substitute goods
- ❑ the demand for final products
- ❑ the marginal product of labor



What factors can cause a change  
in the supply for labor?



Factors that can cause a change in the *supply of labor* include:

- ❑ unions
- ❑ demographic trends
- ❑ expectations of future income
- ❑ changes in immigration laws
- ❑ education and training



What has happened to union membership since WWII?



Since WWII, union membership has  
*declined dramatically.*

**Union Membership  
Percent of All U.S. Workers  
1948 to 2010**



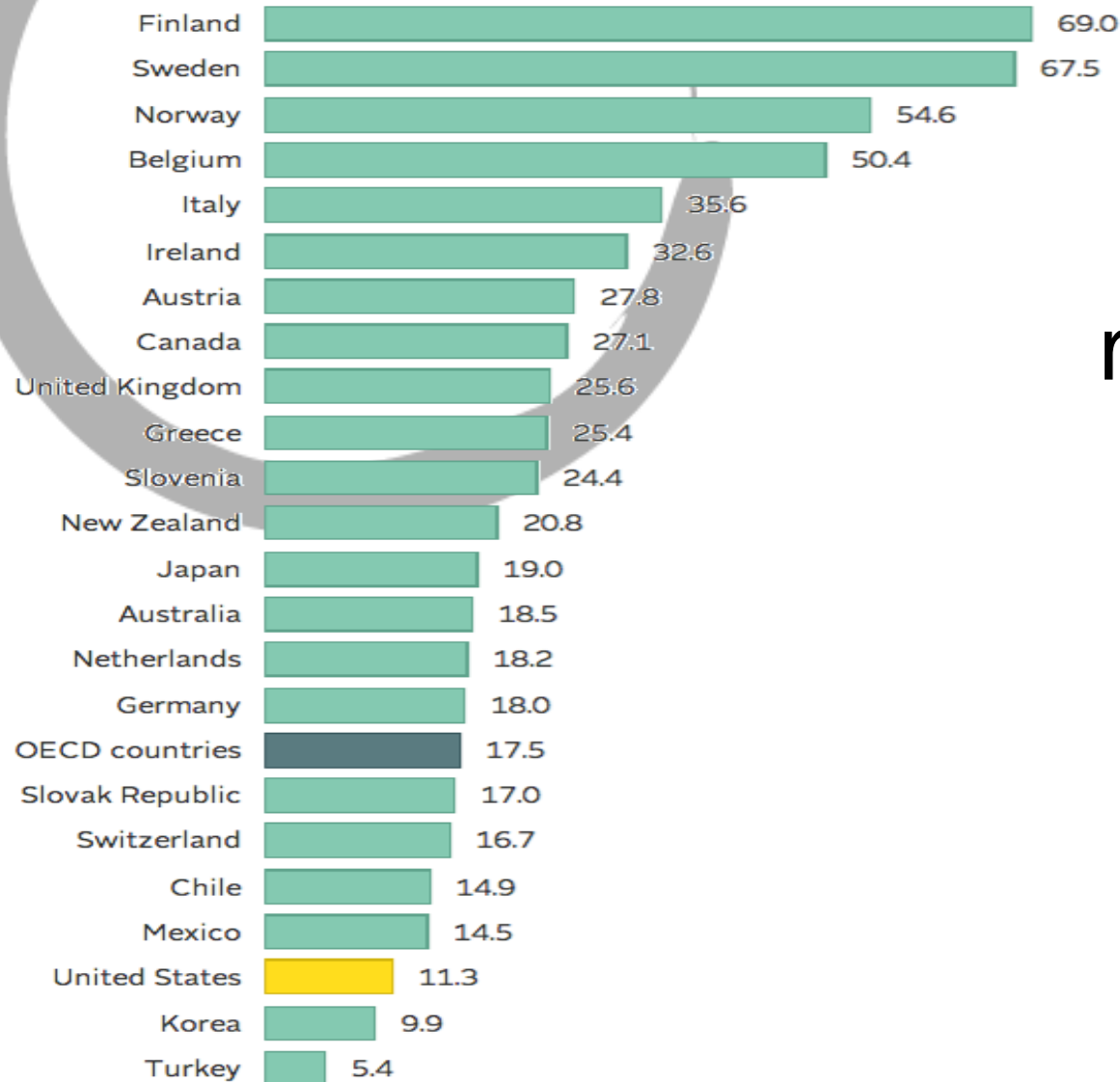


How does union membership in  
the US compare to other  
countries?

# Union membership rates, OECD countries



Percent of workers who were union members, 2011



Union membership in the US is *far below* that of other industrialized countries.



# What is a Monopsony?





A **monopsony** is a labor market in which a single firm hires labor, i.e. there is one buyer of labor.



What is the reason for a  
monopsony?



A monopsony usually occurs when there is an absence of other firms in the area competing for a relatively immobile labor force.

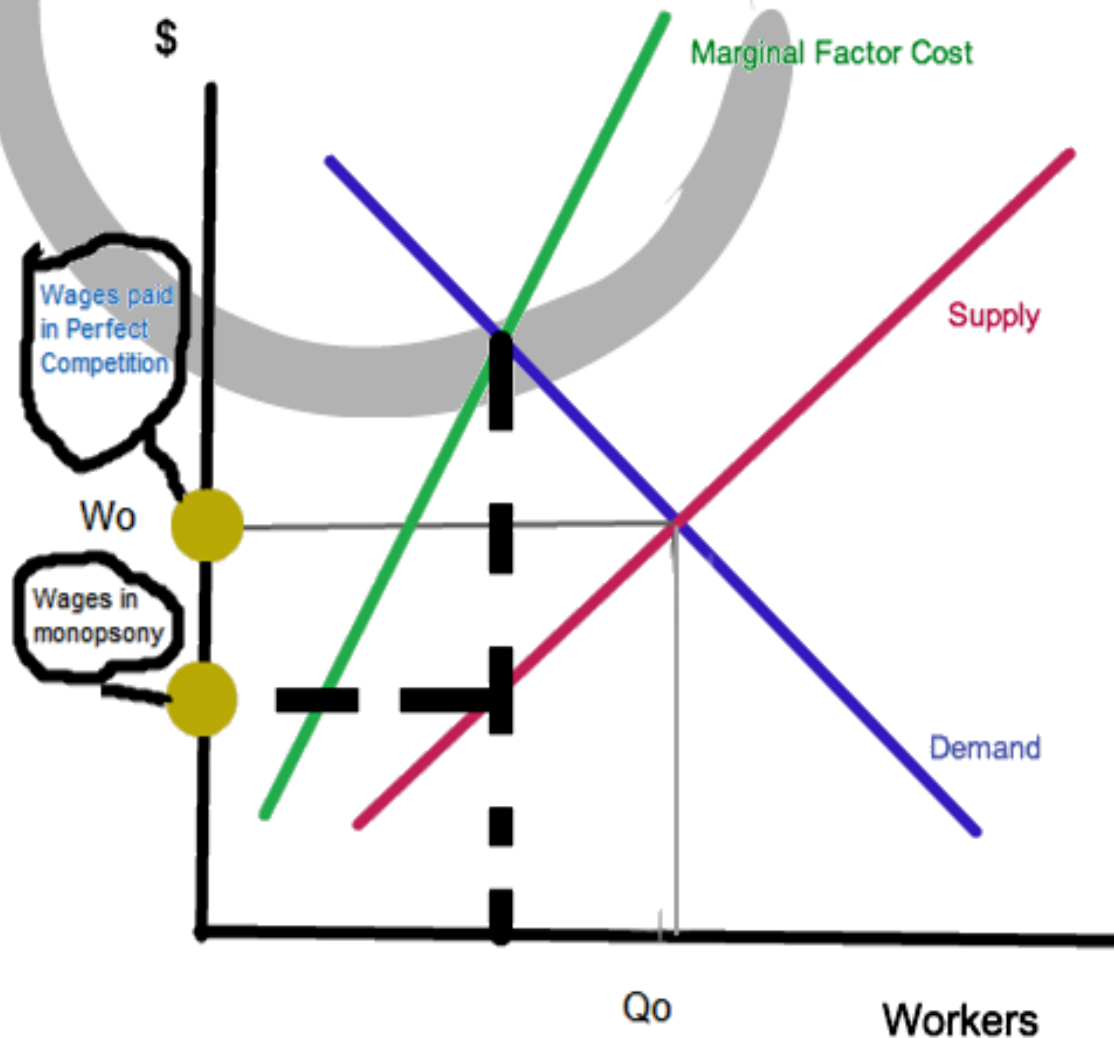
For example, studies suggest that in some rural areas in the South, Wal-Mart has such influence that it is able to exert a significant degree of monopsony power over workers.



What is  
marginal factor cost (MFC)?



**MFC** is the additional total cost resulting from a one-unit increase in the quantity of a factor.



The wage paid in perfect competition is found when the supply and demand curves intercept. The wage paid in monopsony is found by first finding the point where the MFC curve and the demand curve intercept. When this point is vertically extended to the supply curve for the market you find the wage paid in monopsony, which is considerably lower.



What does the monopsonist have to do to hire additional workers?



To hire additional workers, the monopsonist has to *raise the wage* rate for all workers, therefore the MFC exceeds the wage rate.



What are the effects of hiring in a monopsony market?





A monopsonist hires *fewer* workers  
and pays a *lower* wage than a firm in  
a competitive labor market.

How did you do?! If you didn't do as well as you'd like, review the margin notes and presentations and test yourself again.



**CONTINUED IN  
TEST YOURSELF: INCOME,  
TRANSFERS AND TAXES**