Unit III: *Factor Markets*

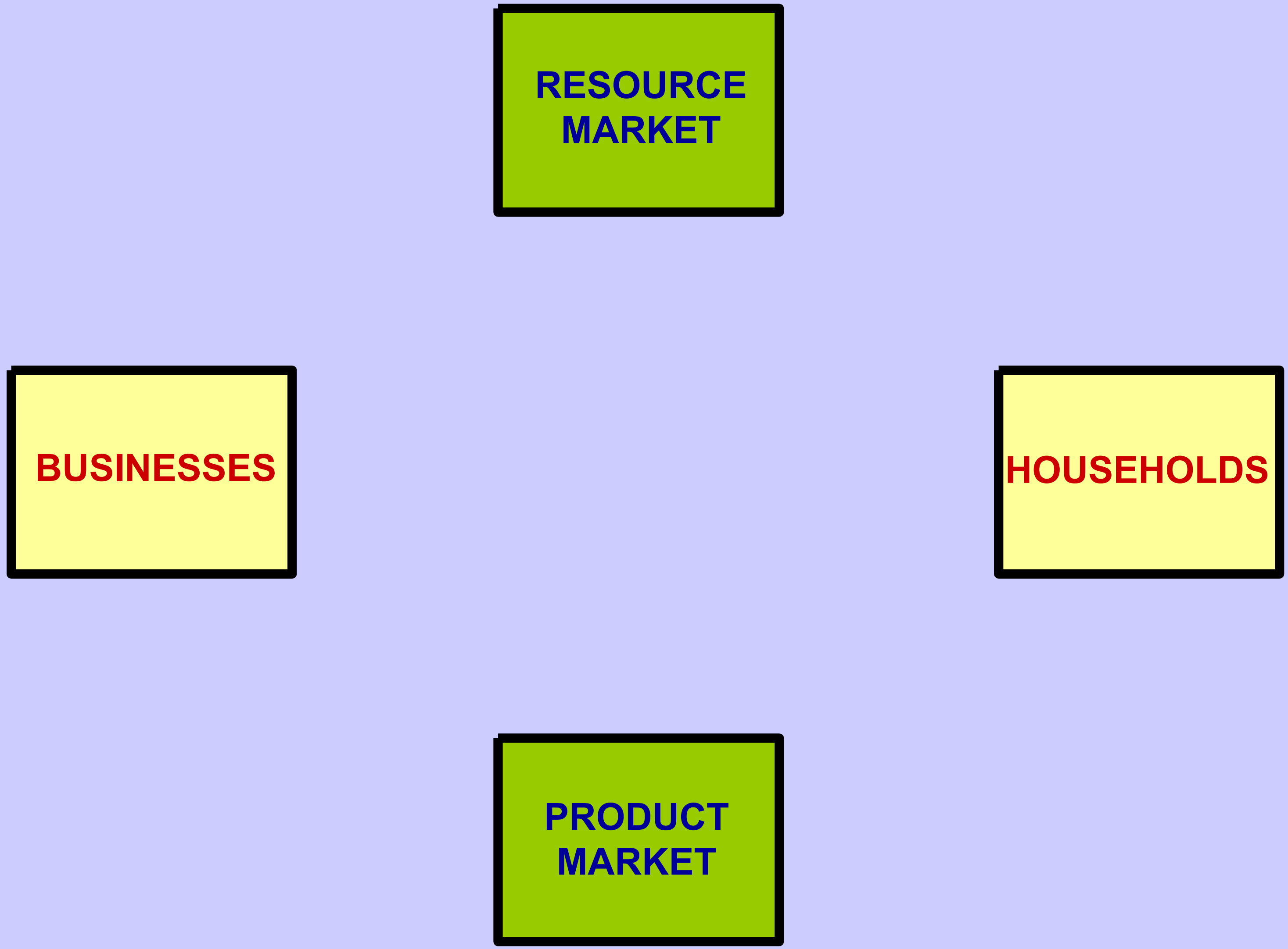
Mr. Miller

AP Microeconomics

MHS

Everything comes back to….
The Circular Flow Diagram

CIRCULAR FLOW MODEL



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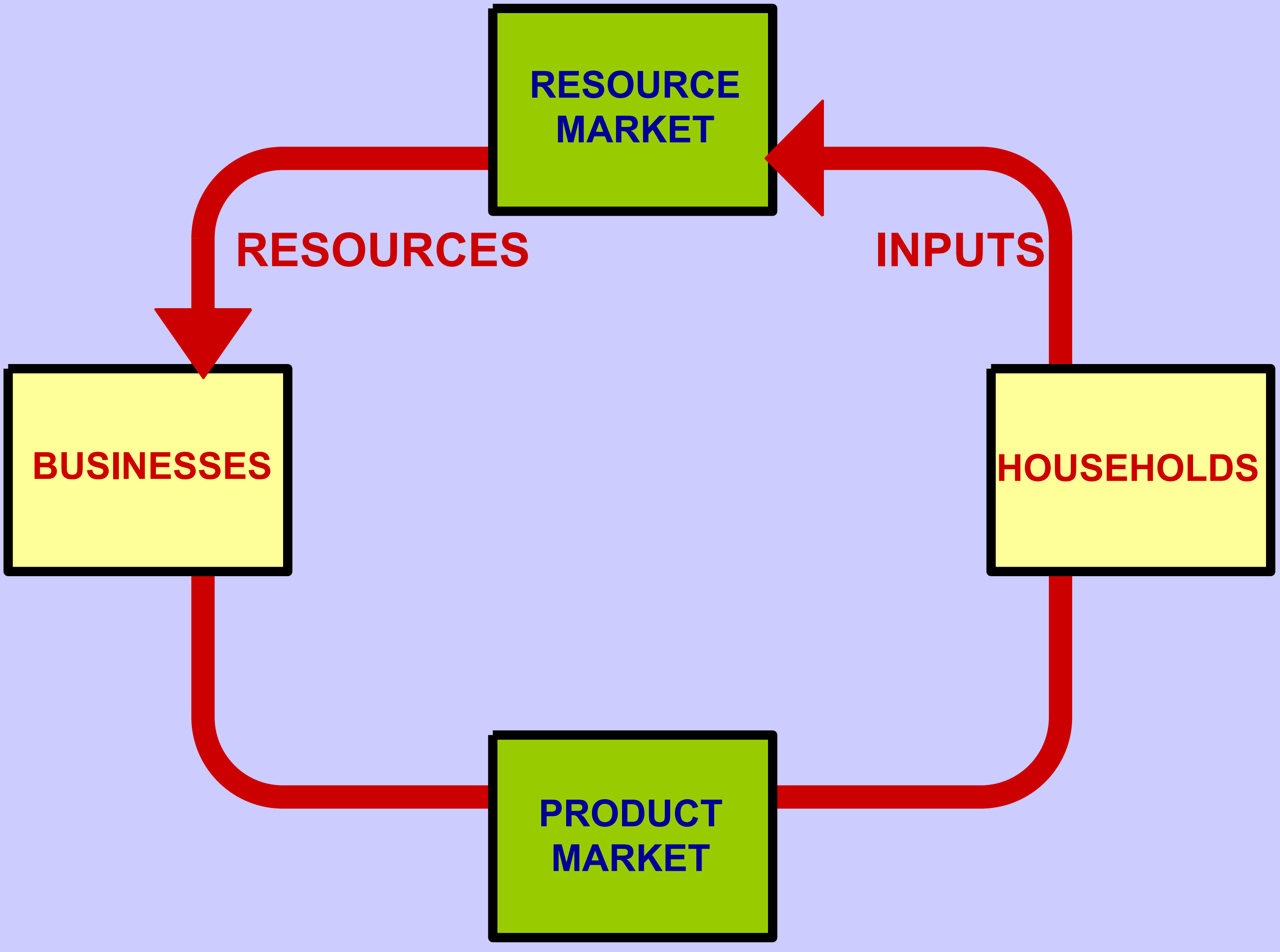

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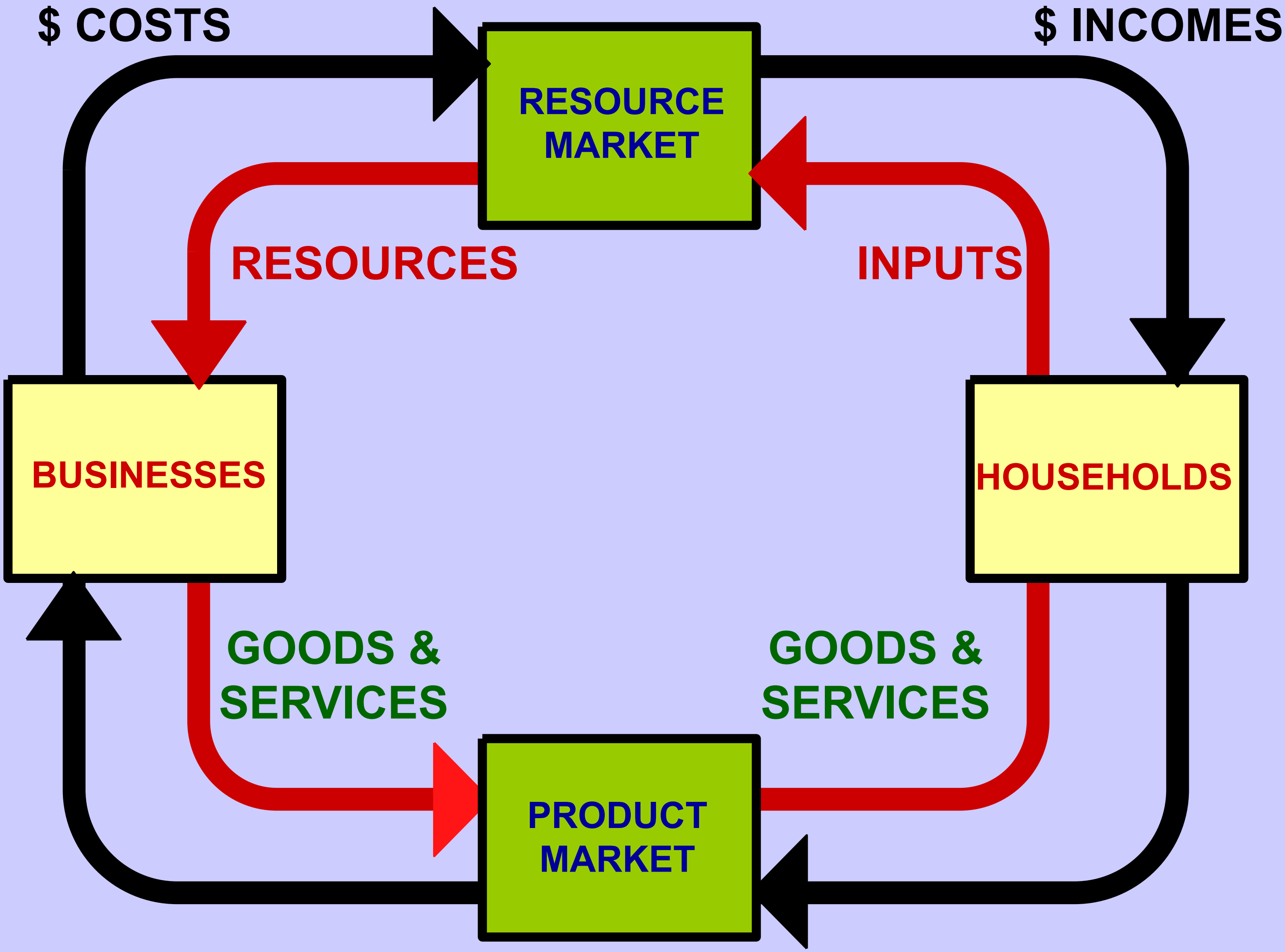

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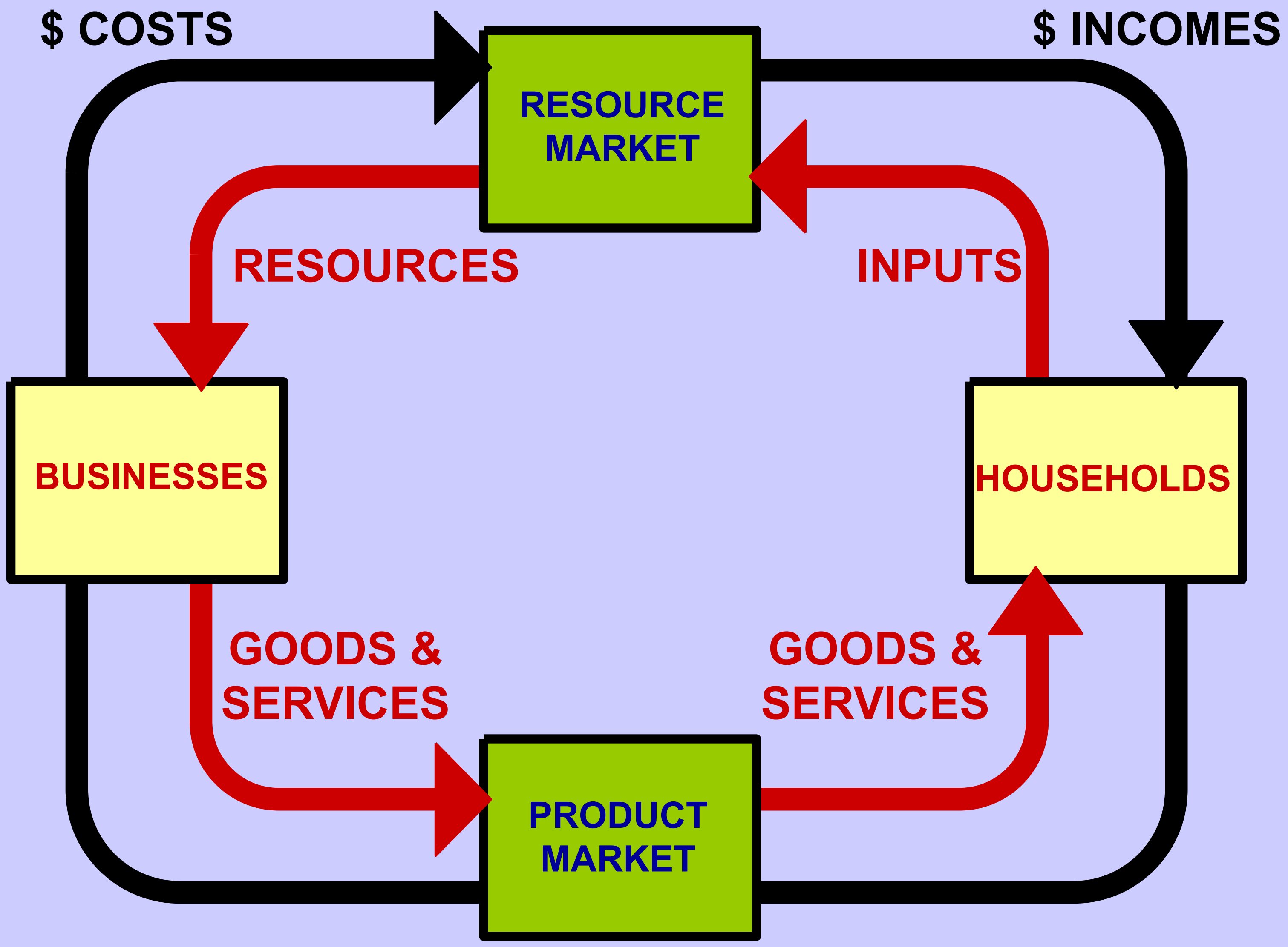

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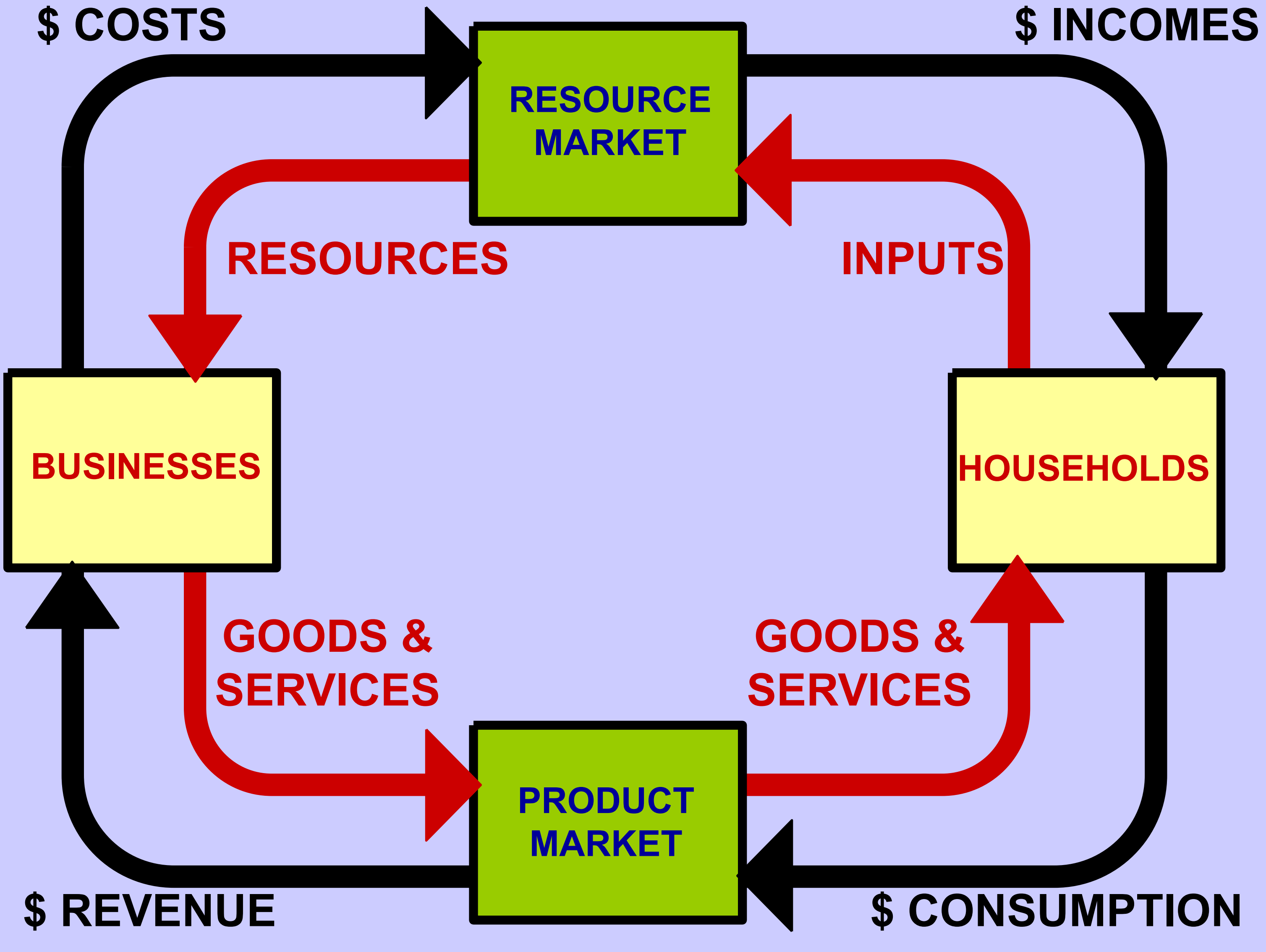

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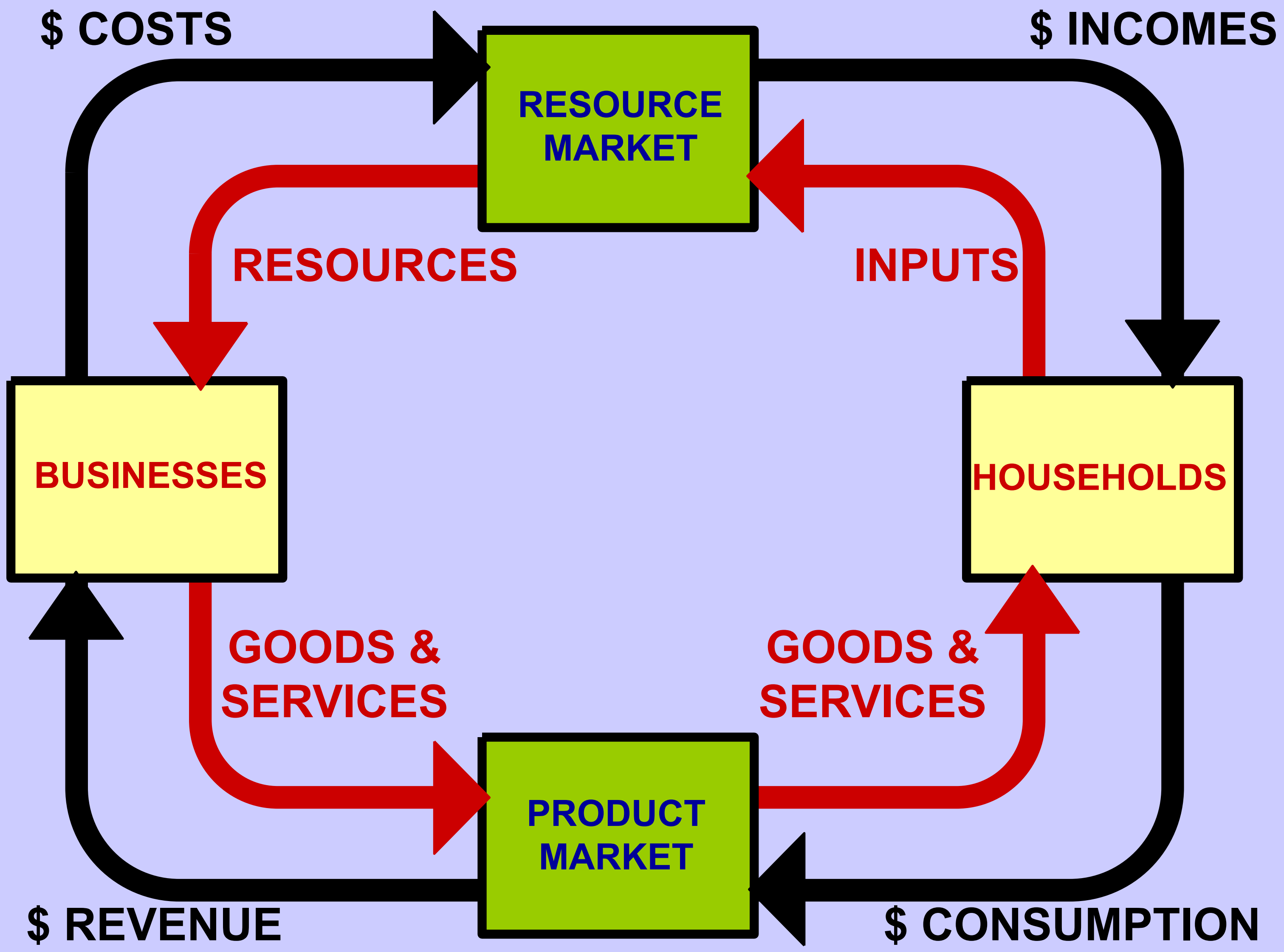
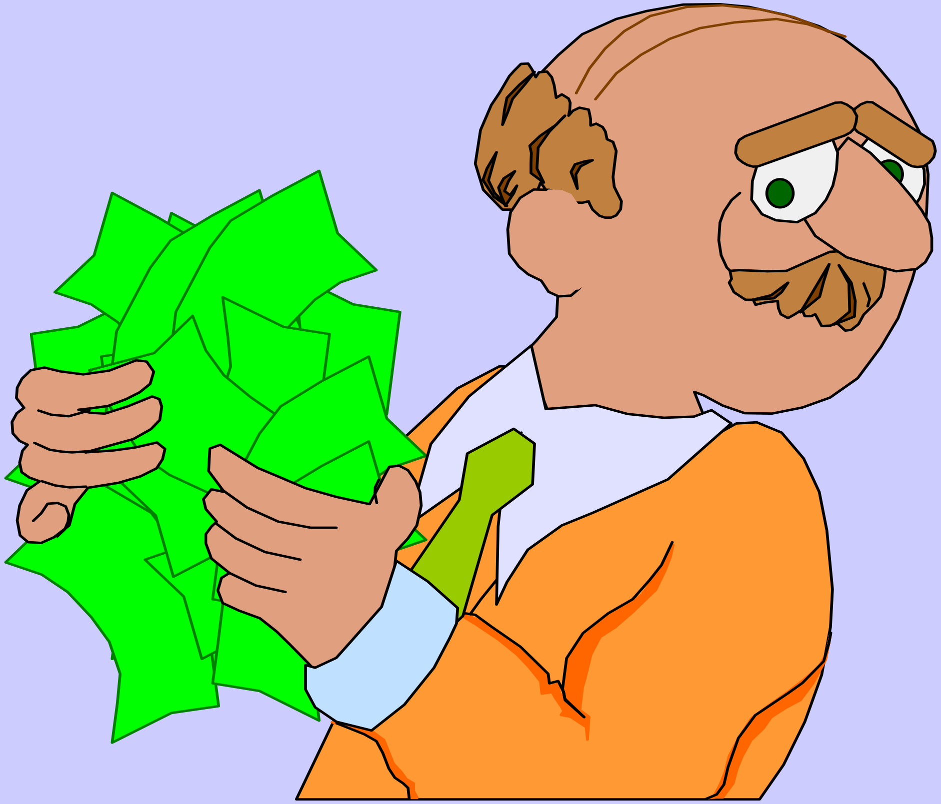




Part I: Pricing the Factors of Production

Resource Demand as a Derived Demand

- The demand for an input is called a **derived demand** because it is derived from the demand for the products it helps to produce.

- Demand for any resource will depend on:

1. The productivity of the resource AND
2. The price of the output it helps to produce

Marginal Revenue Product

- **Marginal Revenue Product (MRP)** = the change in total revenue resulting from employing an additional unit of a resource (for example, labor)

- MRP = $\triangle$TR / $\triangle$L
- **MRP = MP * Price of output (if selling in a perfectly competitive output market)**

Profit Maximizing Hiring Decision

- To maximize profit, firms should continue hiring a resource (like labor) until MRP = MRC.

- **Marginal Resource Cost (MRC)** = the change in total cost resulting from employing an additional unit of a resource (for example, labor)

- $MRC = \triangle TC / \triangle L$

Profit Maximizing Hiring Decision

- The profit-maximizing **MRP = MRC rule** is similar to the MR = MC rule, but it focuses on *inputs,* not *output*.

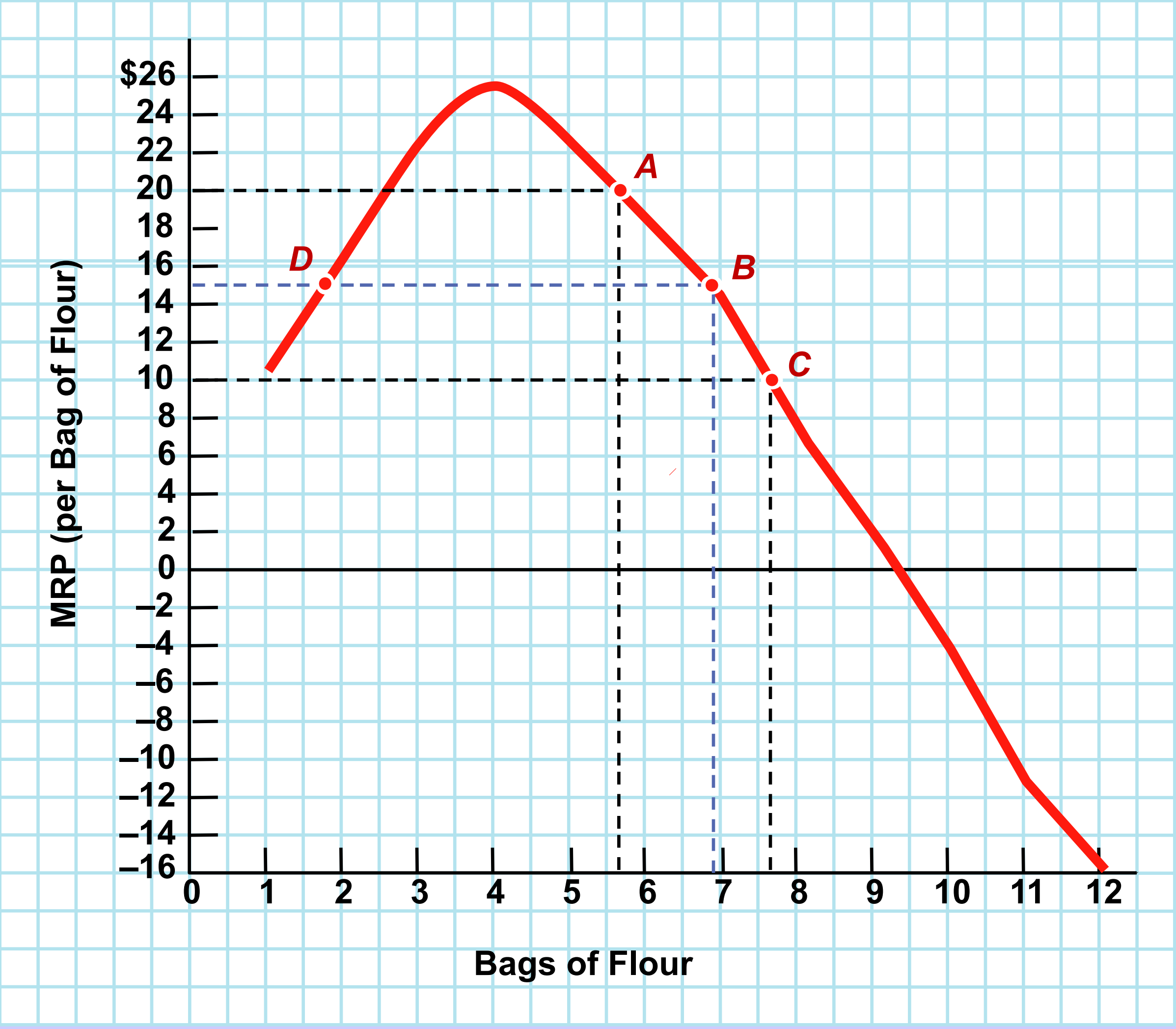
- When resources are hired in perfectly competitive markets, MRC = Price of the Resource.
- Therefore, firms hiring in perfectly competitive labor markets should continue to hire until MRP = Wage Rate.

As seen in…SupPie & Demand!

In this example, CupPies sell for a price of $0.75. What a bargain!!!

Flour Input (Bags)	Total Physical Product (CupPies)	Marginal Physical Product (CupPies)	Average Physical Product (CupPies)	Marginal Revenue Product ($)
0	0	-	-	-
1	14	14	14	$10.50
2	36	22	18	$16.50
3	66	30	22	$22.50
4	100	34	25	$25.50
5	130	30	26	$22.50
6	156	26	26	$19.50
7	175	19	25	$14.25
8	184	9	23	$6.75
9	185.4	1.4	20.6	$1.05
10	180	-5.4	18	$-4.05
11	165	-15	15	$-11.25
12	144	-21	12	$-15.75

MRP Schedule for Flour at SupPie & Demand



Inputs and Their Derived Demand Curves

- The demand curve for a resource is the downward-sloping portion of its MRP curve.
- Resource demand curves slope downward because of **diminishing marginal returns.**

Inputs and Their Derived Demand Curves

- The demand curve for a resource can shift, based on changes in the following *determinants:*
  - Demand for the product
  - Productivity of the resource
  - Changes in the Prices of Other Resources
    - Substitute Resources
    - Complementary Resources

Optimal Combination of Resources

- Profit Maximizing Rule

$$MRP_L / P_L = MRP_C / P_C = 1$$

- Least Cost Rule (minimizing cost)

$$MP_L / P_L = MP_C / P_C$$

Part II: Labor Issues and Wage Determination

Wages Defined...

Wages - - Salary - - Earnings

Wage Rate

Nominal Wages

Real Wages

GENERAL LEVEL OF WAGES

Role of Productivity

- Plentiful Capital
- Access to Abundant Natural Resources
- Advanced Technology
- Labor Quality
- Other Factors

Competitive Labor Markets

PURELY COMPETITIVE LABOR MARKET

Purely competitive labor market:

Many Firms

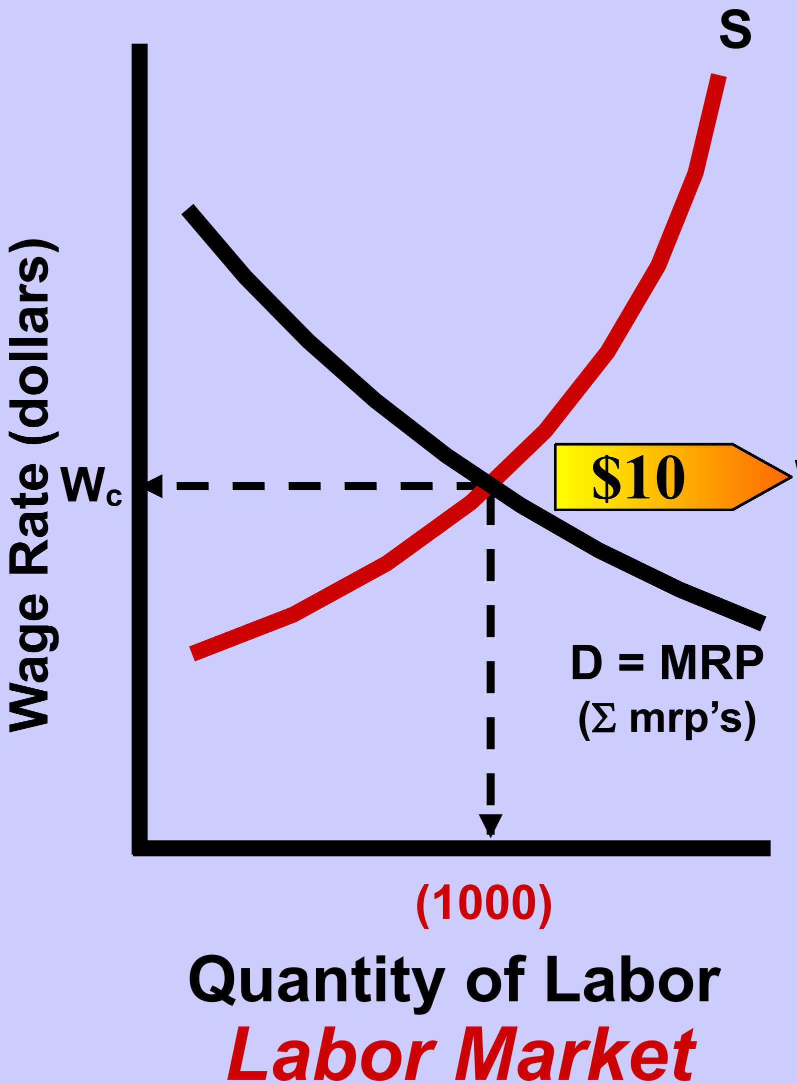
Numerous Qualified Workers

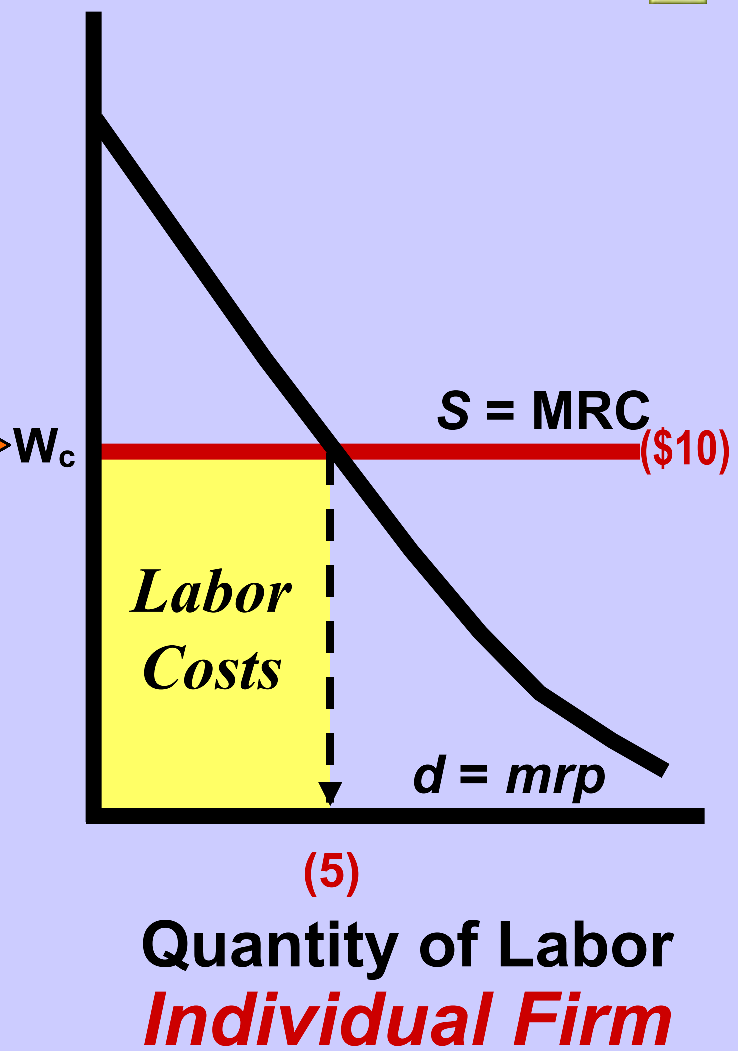
"Wage Taker" **Behavior**

Market Demand for Labor

Market Supply of Labor

PURELY COMPETITIVE LABOR MARKET EQUILIBRIUM





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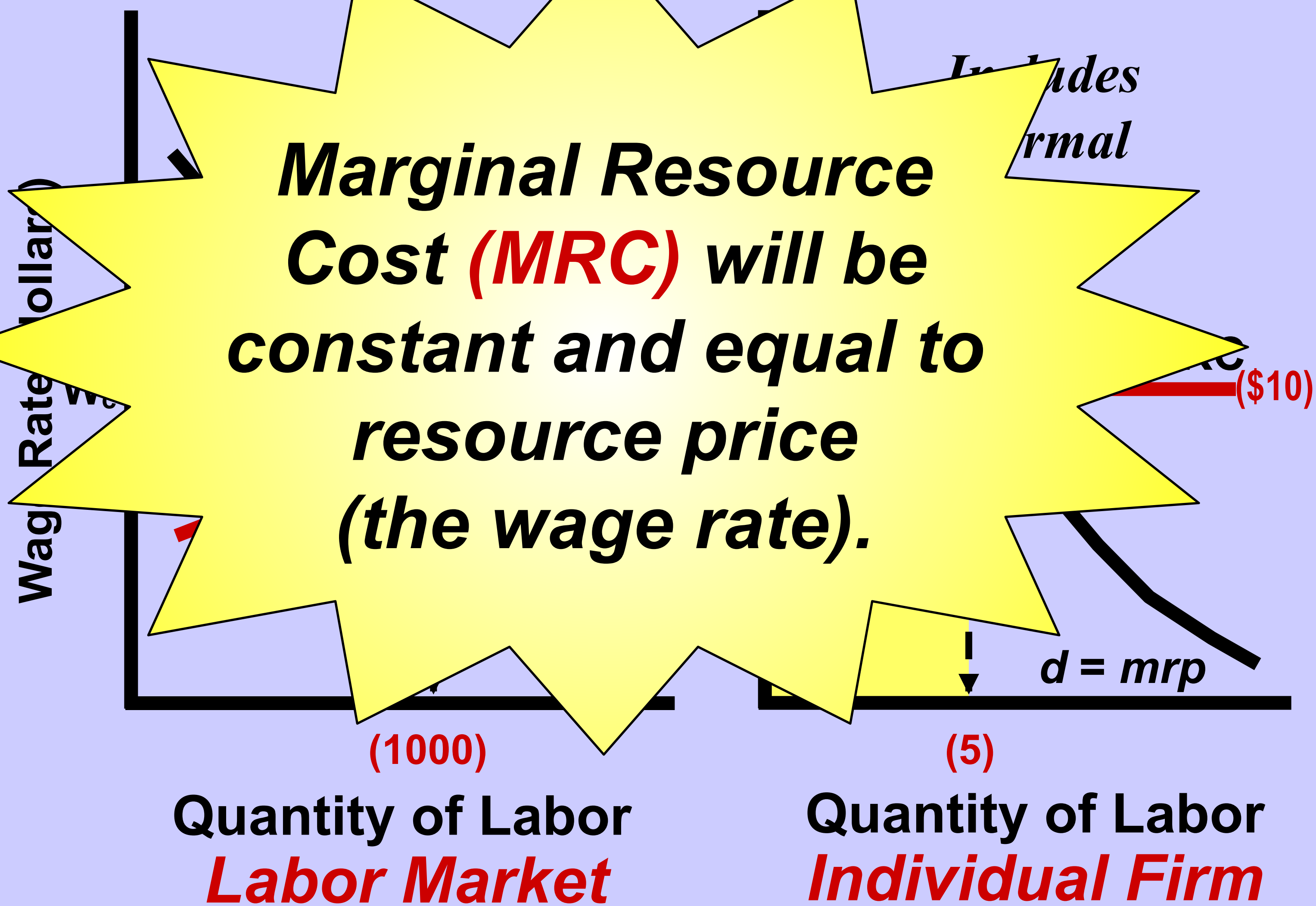


Marginal Resource Cost (MRC) will be constant and equal to resource price (the wage rate).

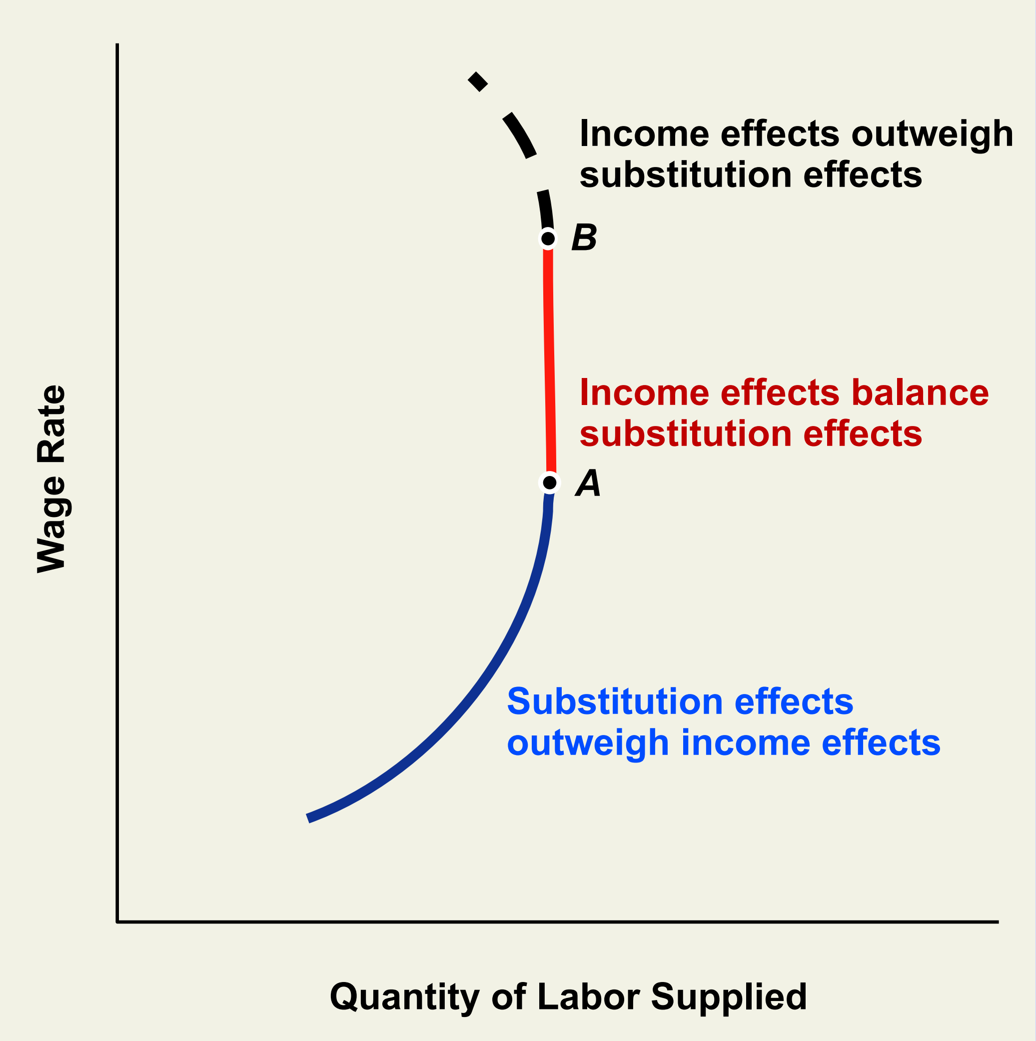
Wage Determination in Competitive Labor Markets

- Influences on MRP_L: Shifts in the Demand for Labor
  - Investment in human capital $\Rightarrow \uparrow MRP_L$
  - Since the demand for labor is a derived demand, increasing demand for the goods and services that labor produces increases MRP_L (the labor demand curve shifts right).

The Supply of Labor

- An Important Labor Supply Puzzle
  - Supply of labor = demand for leisure
  - Effects of wage increase
    - Substitution effect: $\uparrow$cost of leisure $\Rightarrow$ positively sloped supply curve (more hours worked)
    - Income effect: $\uparrow$ wealth $\Rightarrow$ negatively sloped curve (fewer hours worked)

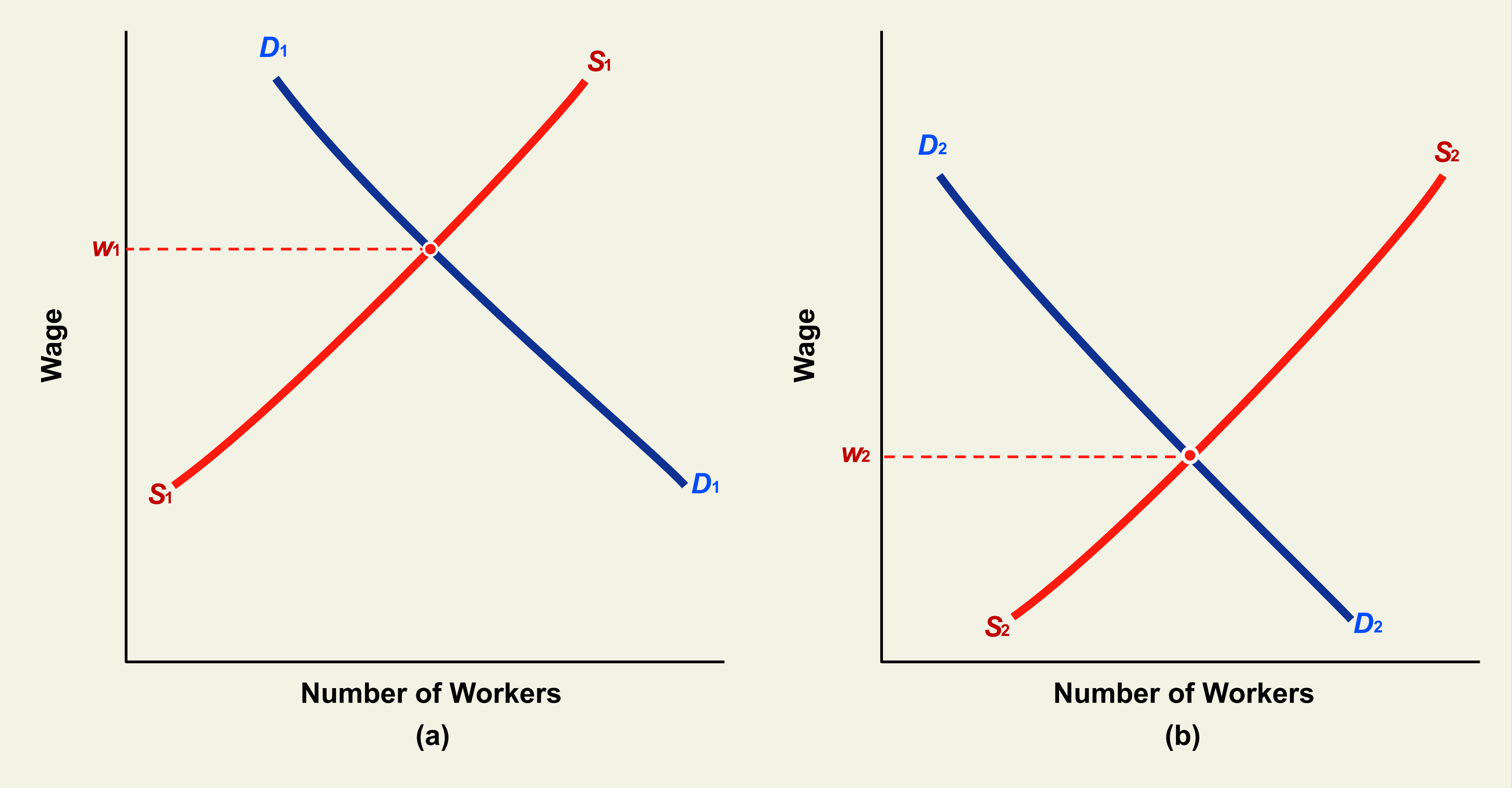
A Typical Labor Supply Schedule



Why Do Wages Differ?

- The explanation of wage differences is the fact that there is not one labor market but many.
  - Each has its own supply and demand curves.
  - Each has its own equilibrium wage.

Wage Differentials



Why Do Wages Differ?

- Labor Demand in General
  - Different workers have different productivities.
  - Each worker’s marginal physical product depends on:
    - His or her own abilities
    - His or her degree of effort
    - The other factors of productions with which he or she has to work

Why Do Wages Differ?

- Labor Supply in General
  - Factors that influence the supply side:
    - The size of the available working population
    - The non-monetary attractiveness of a job
    - The abilities needed
    - The amount and expense of the necessary training

Why Do Wages Differ?

- Investment in Human Capital
  - Human capital theory sees education and training as investments, leading to a later payoff of higher earnings.
  - The higher earnings are necessary to induce the sacrifices needed in terms of education and training.

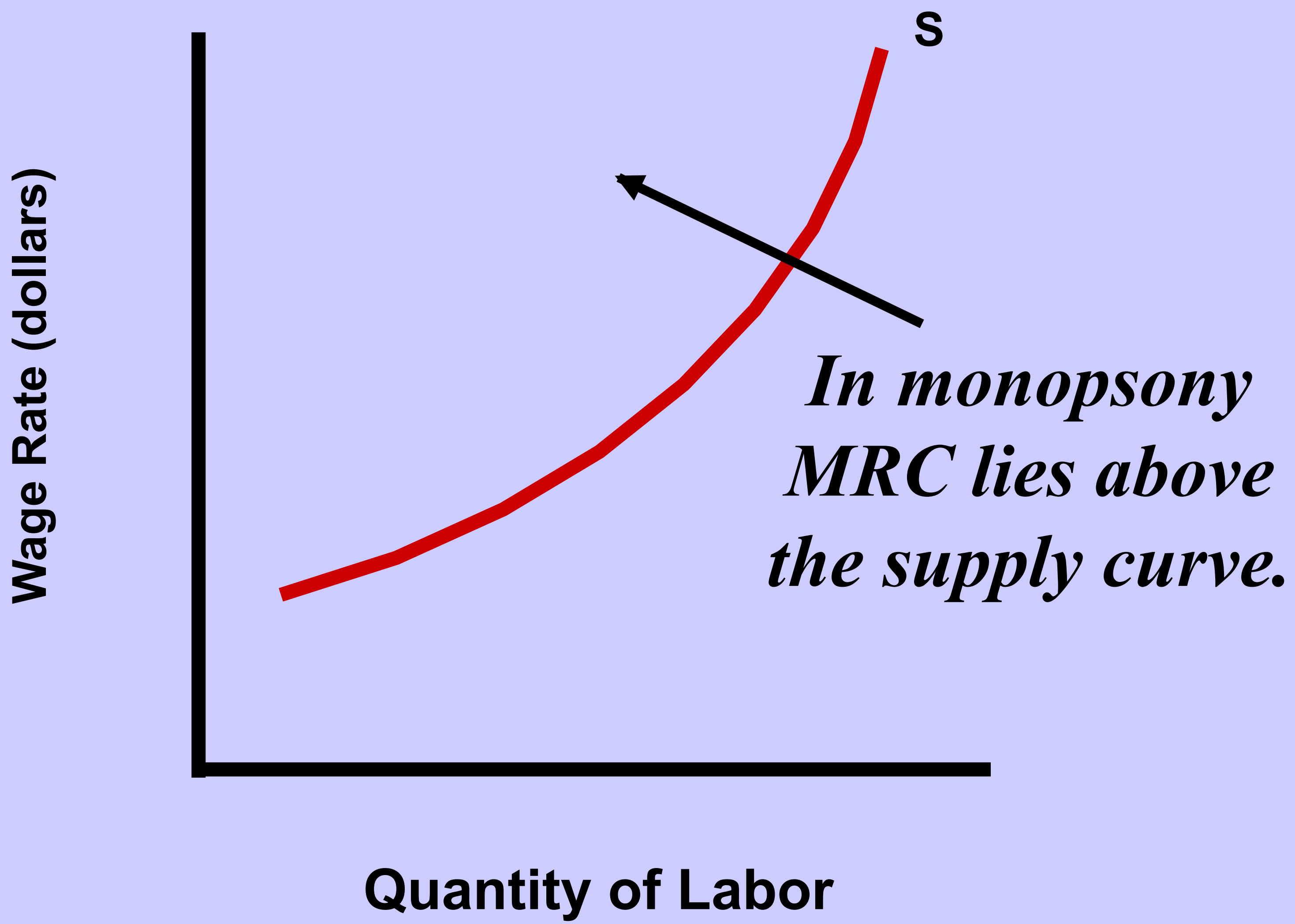
Imperfect Labor Markets and the Impact of Unions

MONOPSONY MODEL

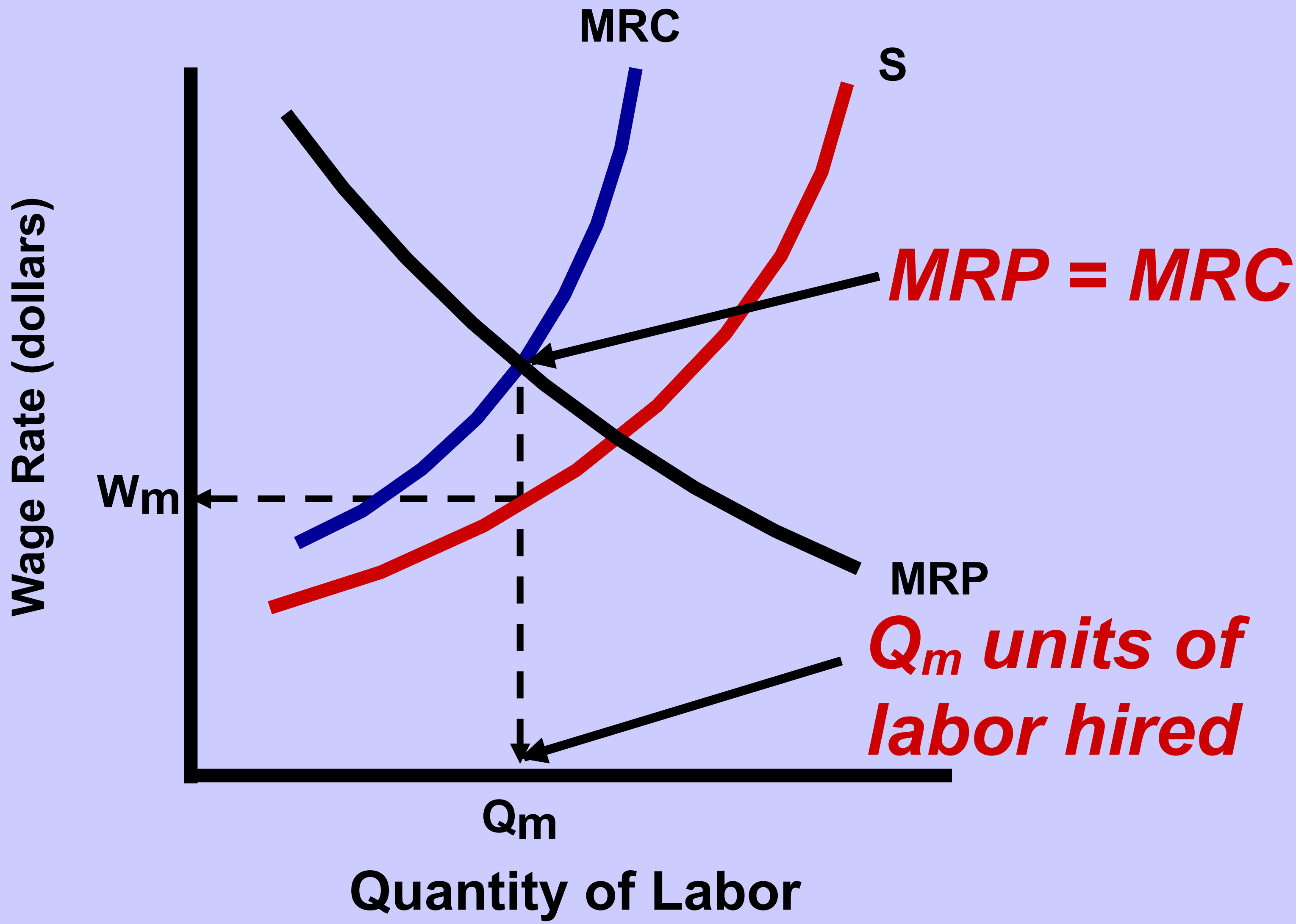
- **Single Buyer of a type of labor**
- **The type of labor is relatively immobile**
- **“Wage Maker” Behavior**

Upward-Sloping Supply Curve to Firm

MONOPSONISTIC LABOR MARKET



MONOPSONISTIC LABOR MARKET



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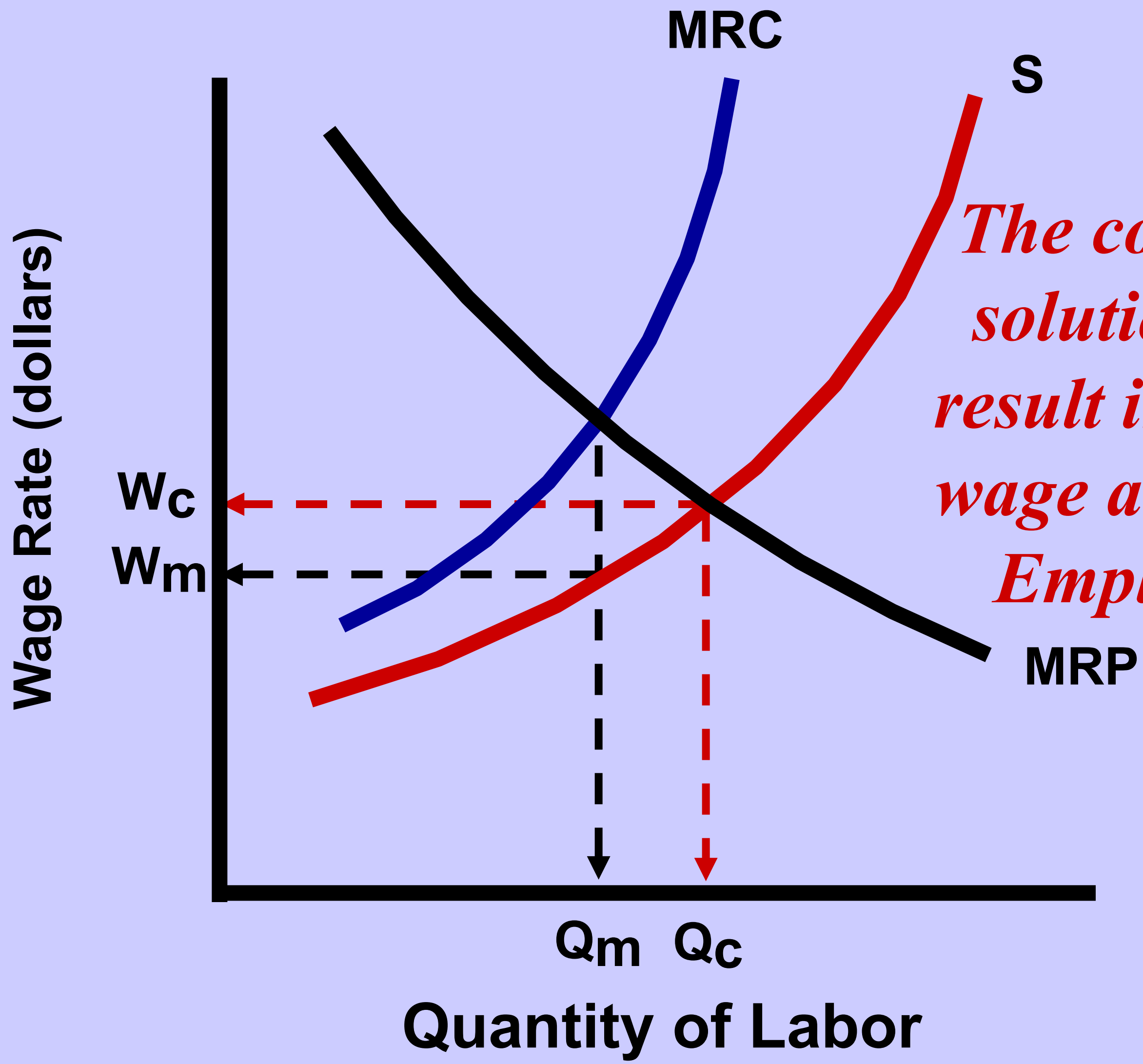
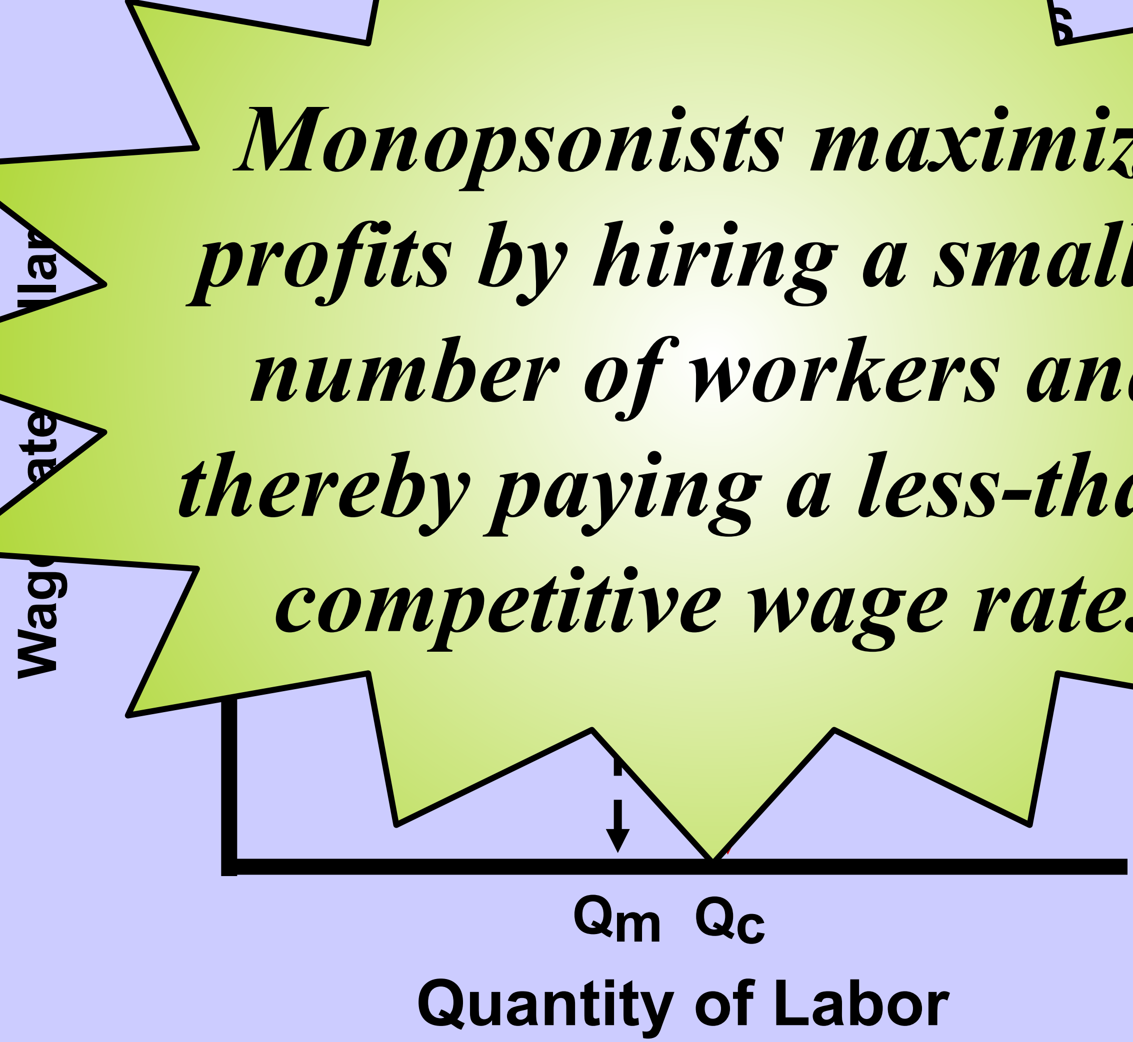


The competitive solution would result in a higher wage and greater Employment.

MONOPSONISTIC LABOR MARKET



Monopsonists maximize profits by hiring a smaller number of workers and thereby paying a less-than-competitive wage rate.

Unions and Collective Bargaining

- Unions attempt to monopolize the sale of labor, so the competitive model breaks down in this case.
- Union membership is only a small and declining portion of the American labor force, however.

Unions and Collective Bargaining

- Why has unionism been declining?
  - The shift of the U.S. labor force into service industries and out of manufacturing
  - Deregulation forced some industries to compete more intensely, and it may, thus, have influenced the firms to hire less-expensive, non-union labor.

Unions and Collective Bargaining

- Unionization is much less prevalent in America than it is in most other industrialized countries.
- The main sector of the U.S. economy in which the unions are still fairly healthy is government employment.

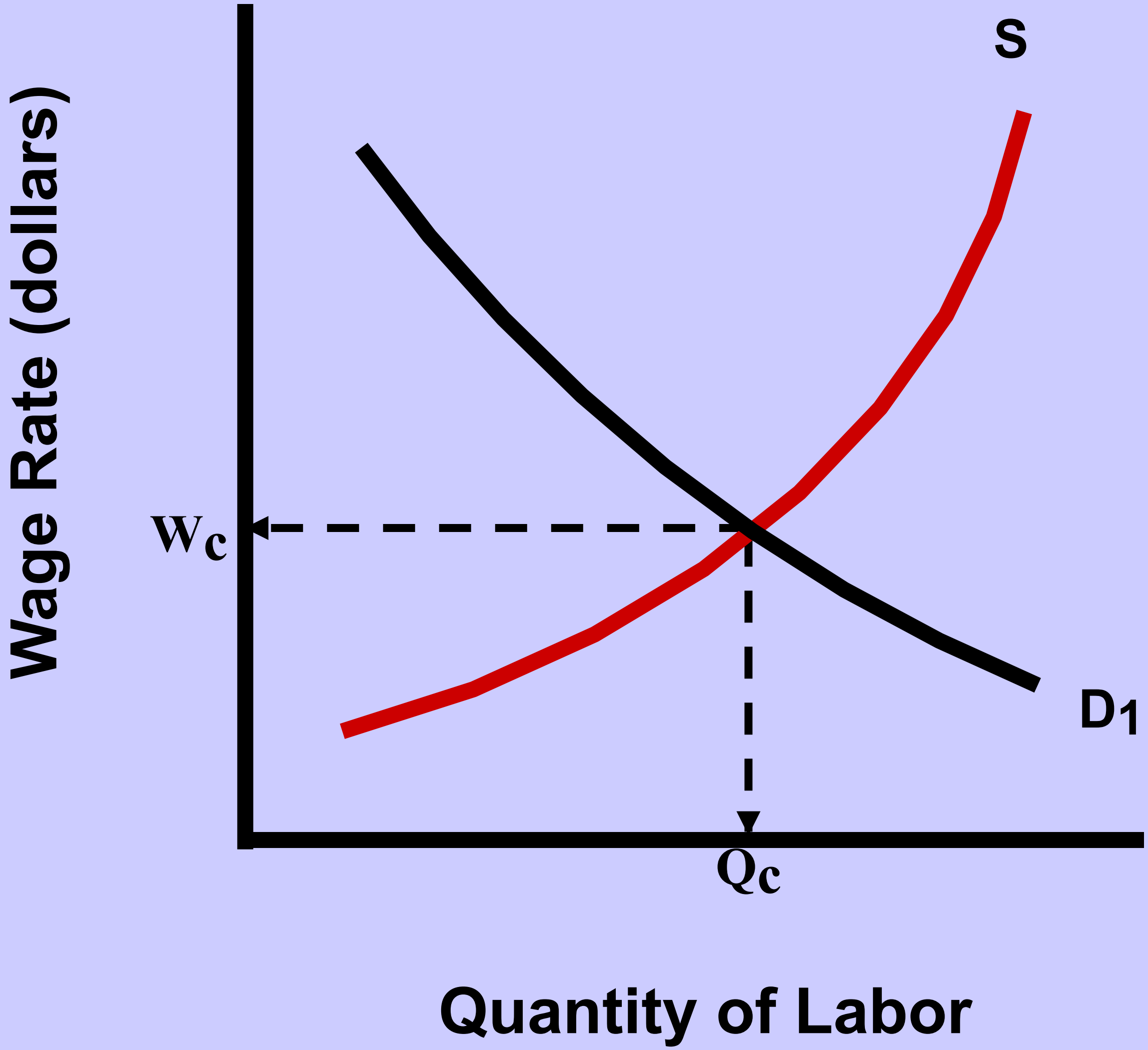
Unions as a Labor Monopolies

- Unions can monopolize the supply of labor, but they are not all powerful.
- Unions must choose among competing goals, and they need to weigh alternative strategies.
  - Attaining the highest wage possible for current union members
  - Increasing the size of the union

- Unions also try to ↑ the demand for labor:
  - Featherbedding: forcing management to employ more workers than they really need
  - Institute a campaign to raise worker productivity
  - Raise the demand for the company’s product
    - Flex political muscle (for example, by obtaining legislation to reduce foreign competition)
    - Appeal to the public to buy union products.

THREE UNION MODELS

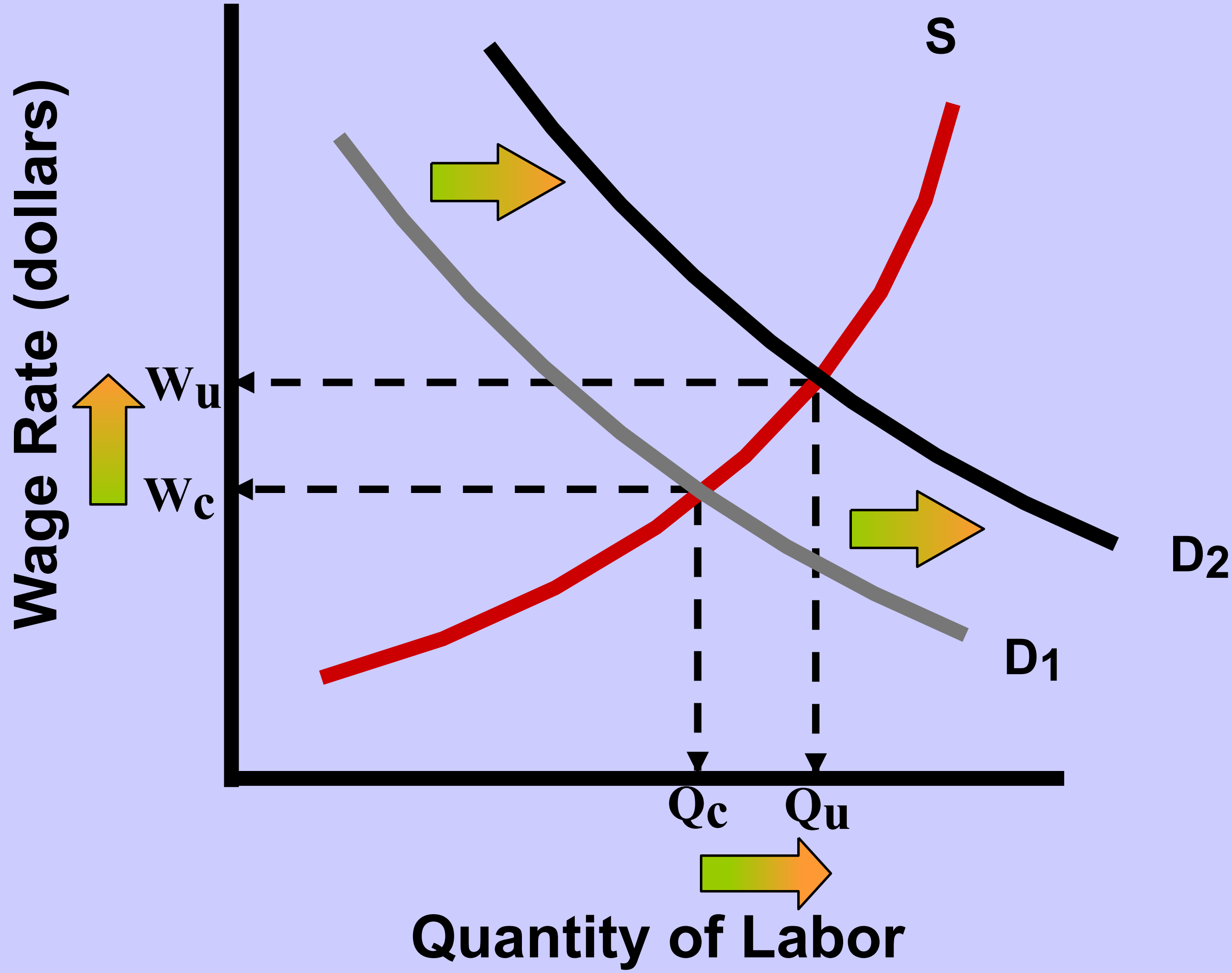
Demand-Enhancement Model



THREE UNION MODELS

Demand-Enhancement Model

...by increasing product demand

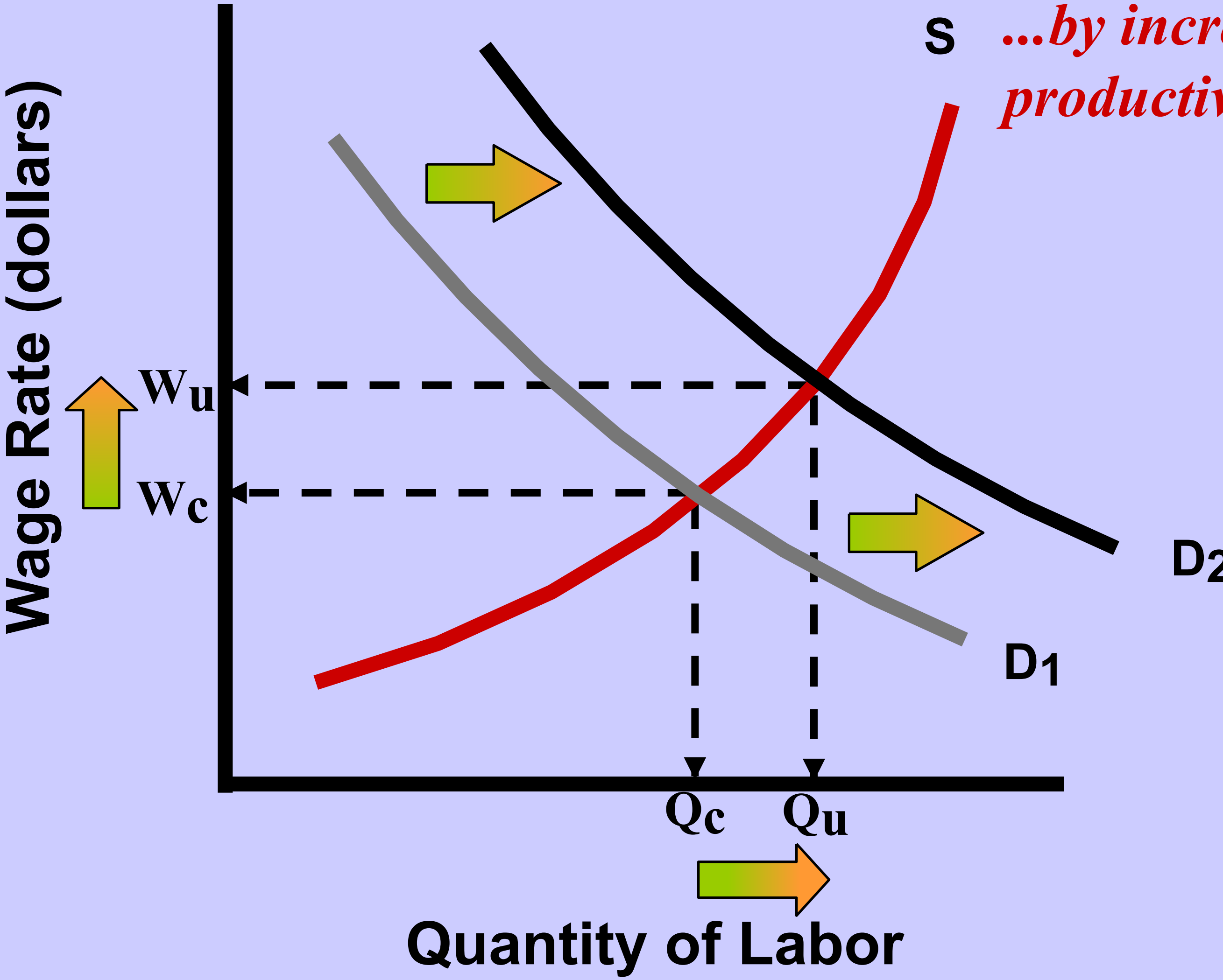


THREE UNION MODELS

Demand-Enhancement Model

...by increasing product demand

...by increasing productivity



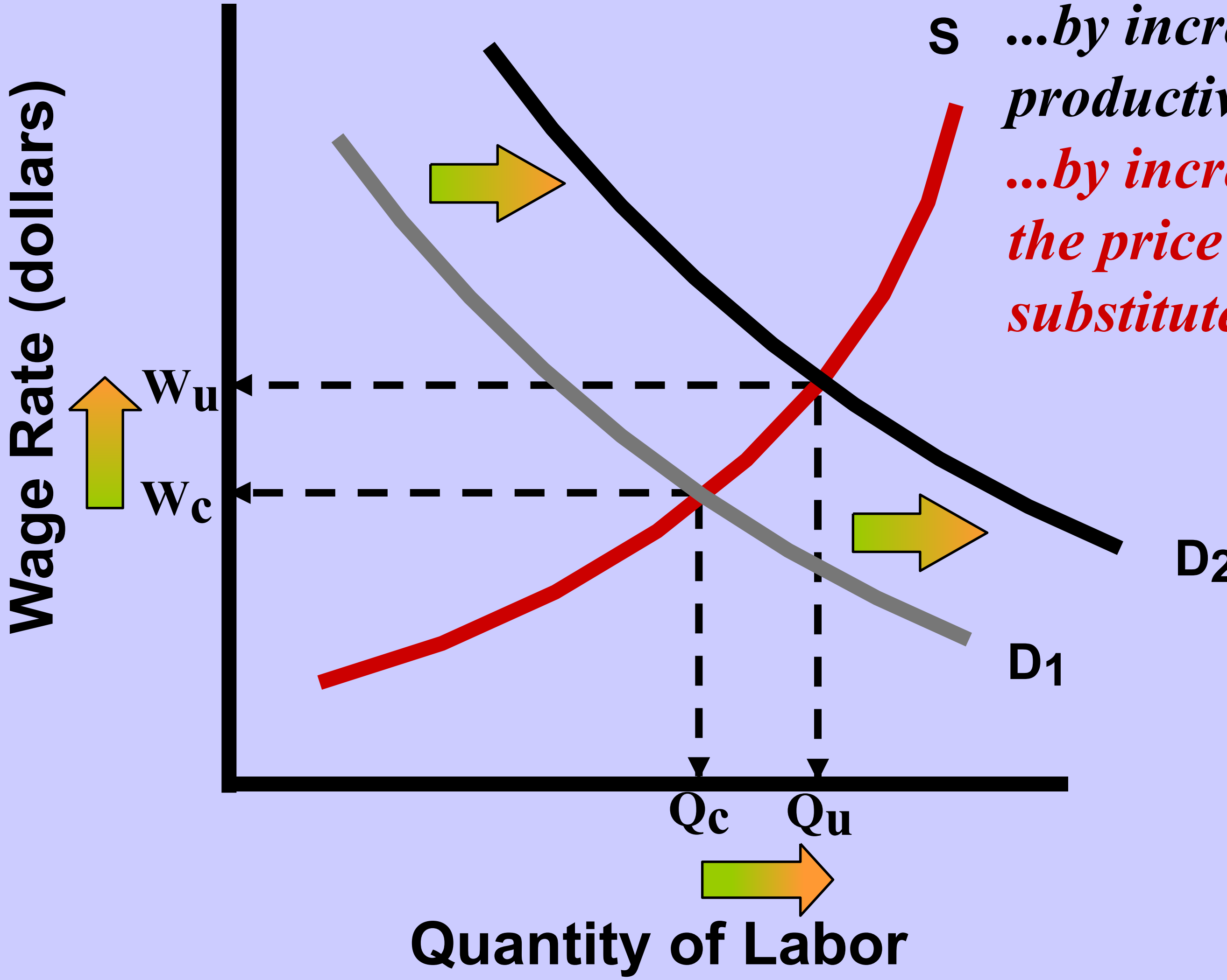
THREE UNION MODELS

Demand-Enhancement Model

...by increasing product demand

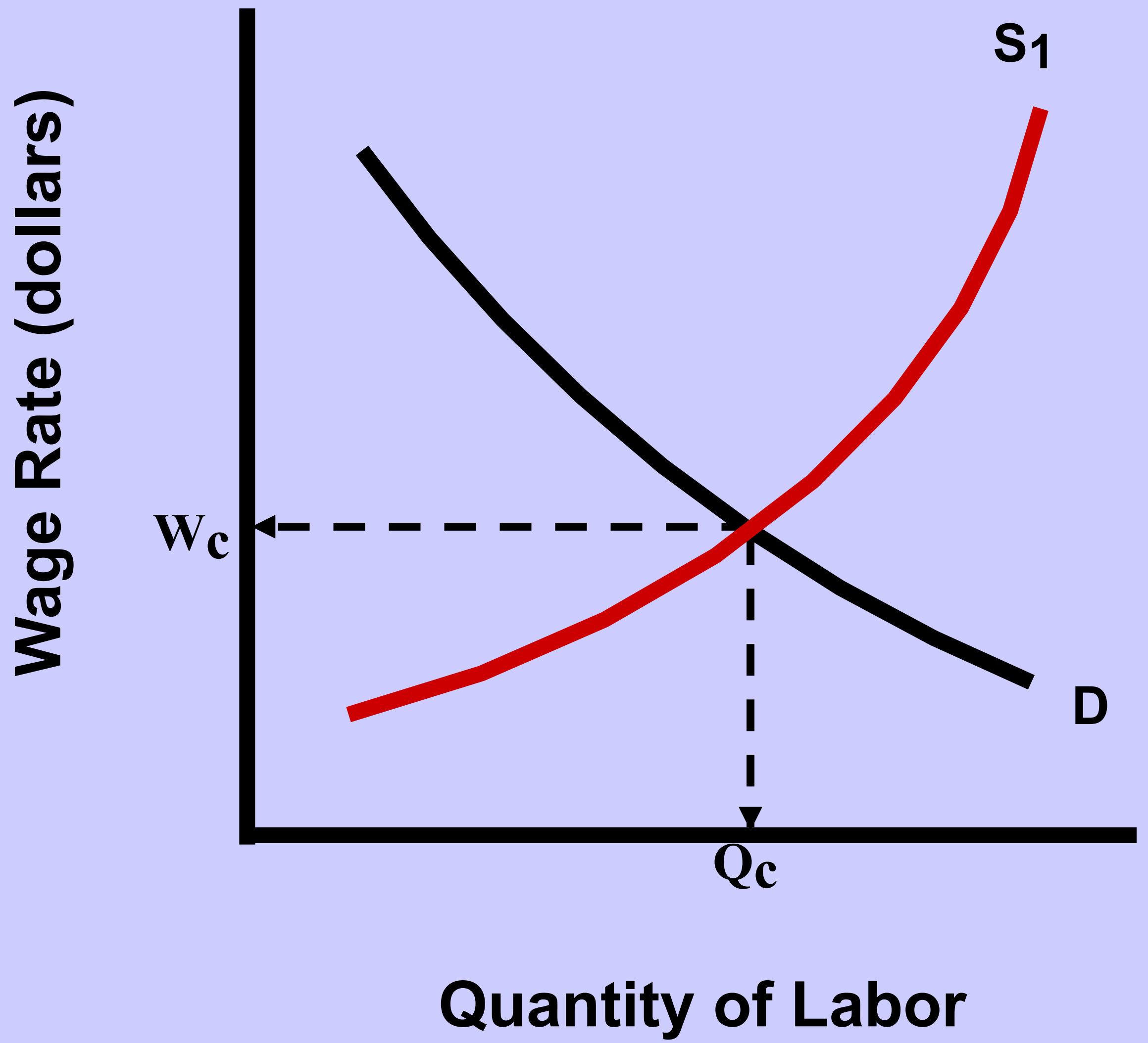
...by increasing productivity

...by increasing the price of substitutes



THREE UNION MODELS

Exclusive or Craft Model



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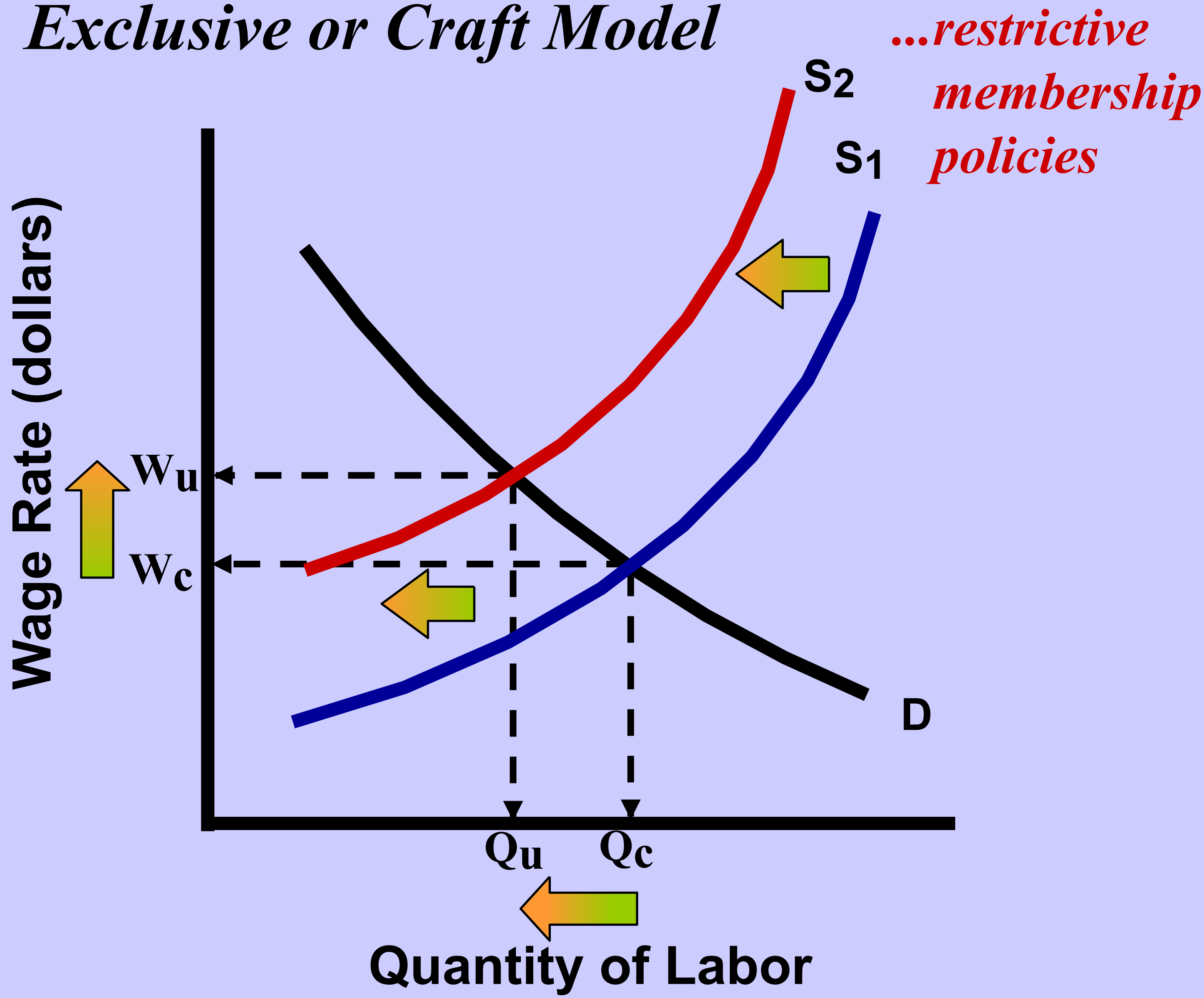

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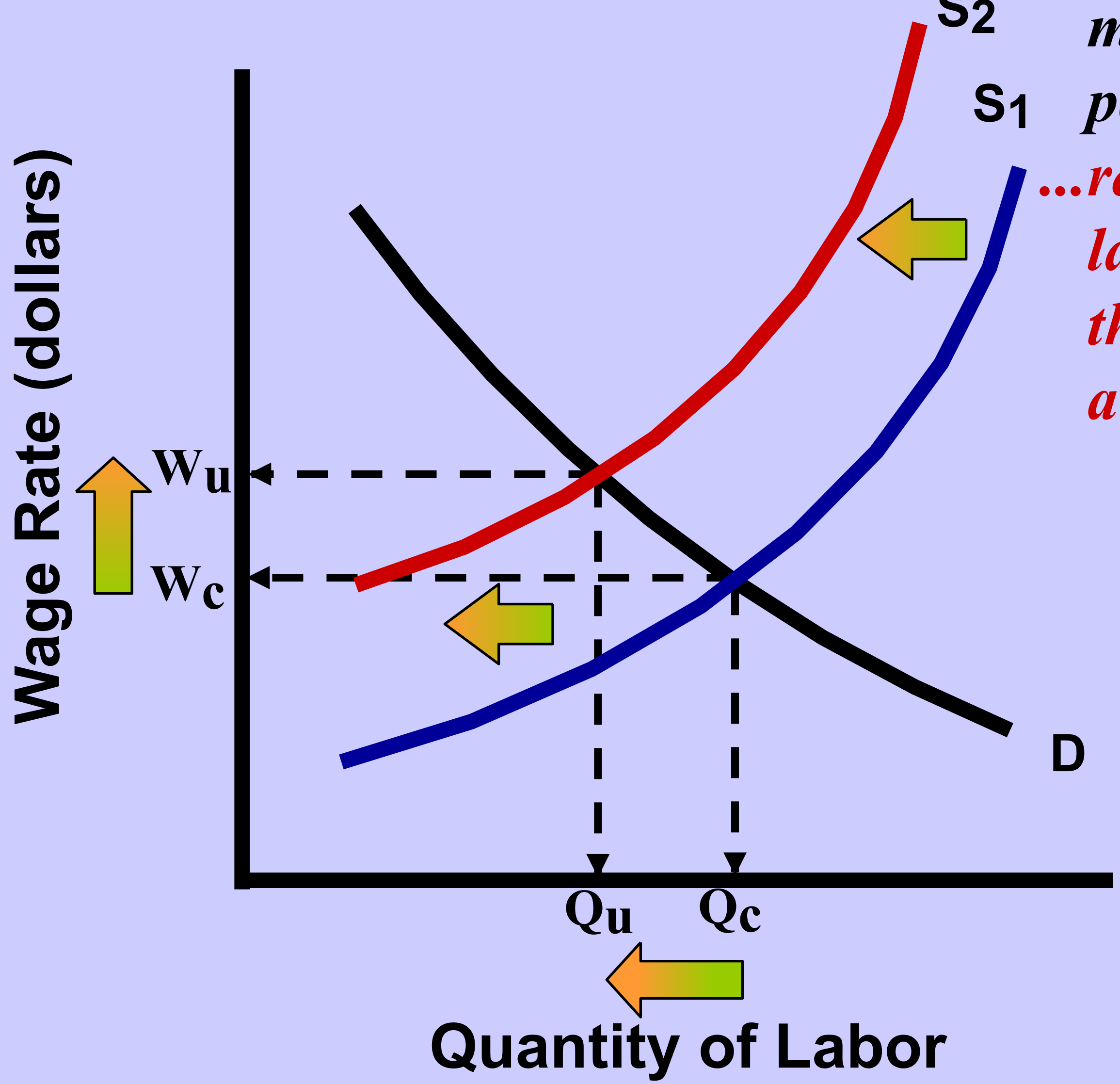
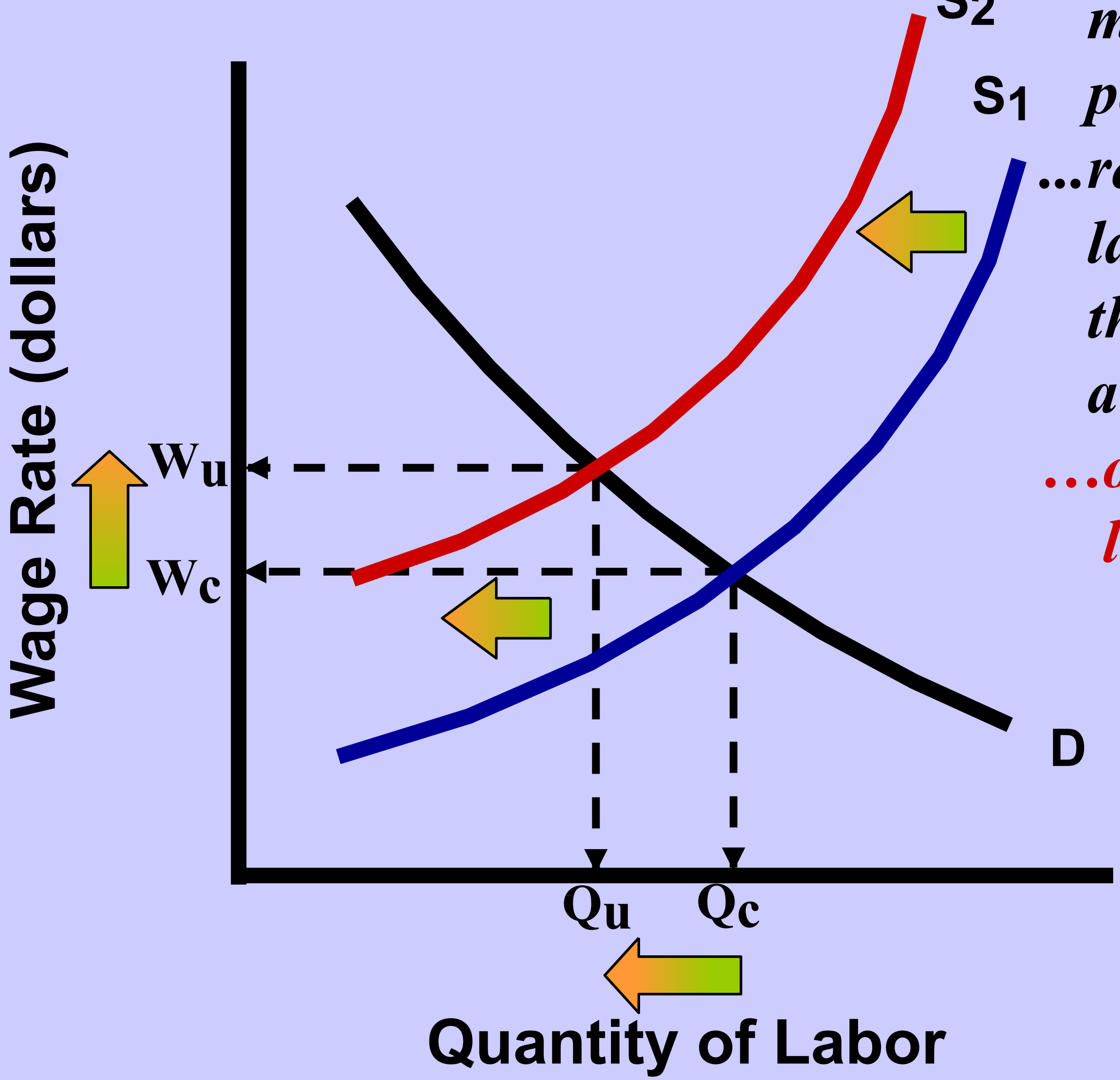


...restrictive membership policies

...restricting labor supply of the economy as a whole

THREE UNION MODELS

Exclusive or Craft Model



...restrictive membership policies

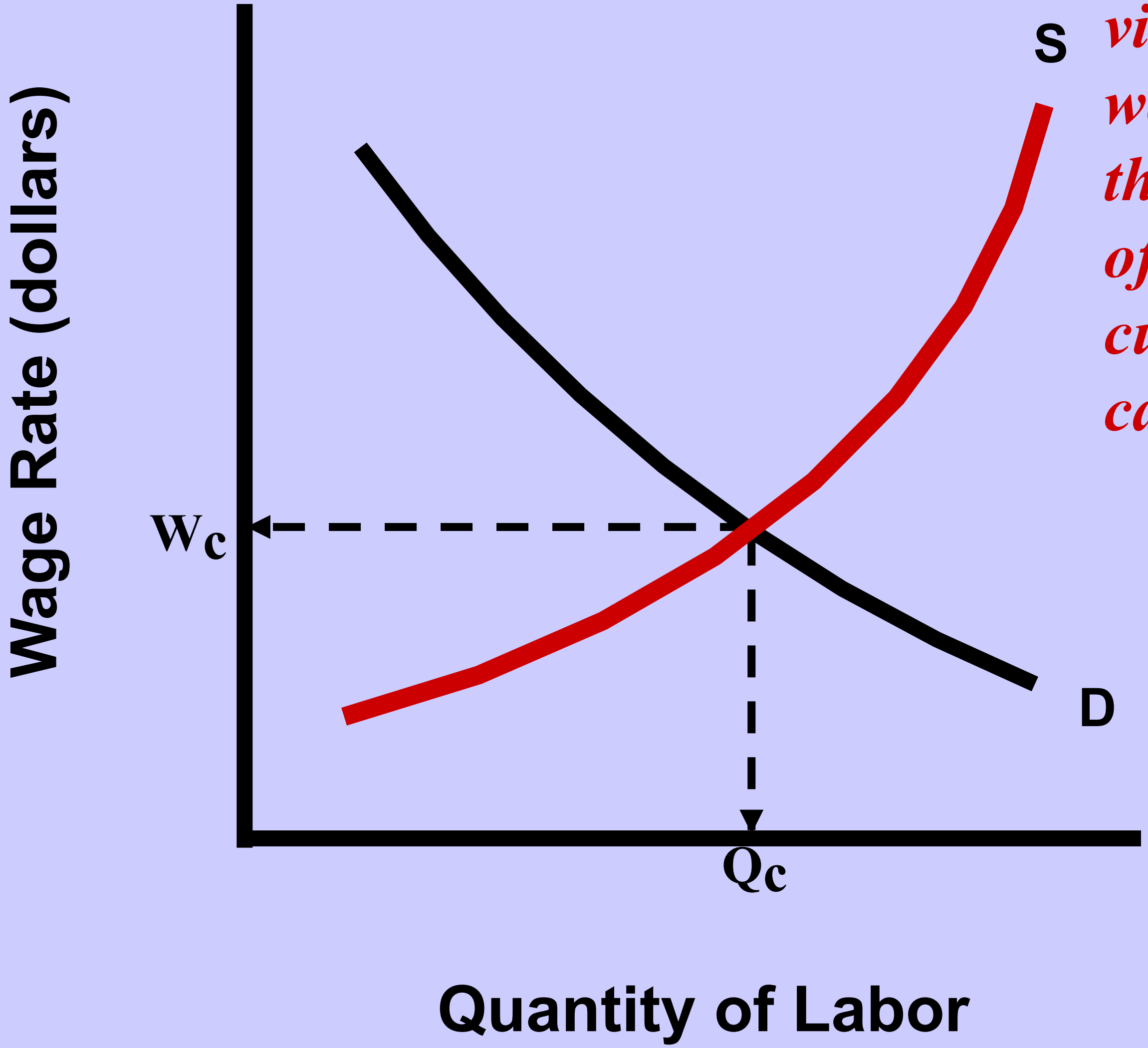
...restricting labor supply of the economy as a whole

...occupational licensing

THREE UNION MODELS

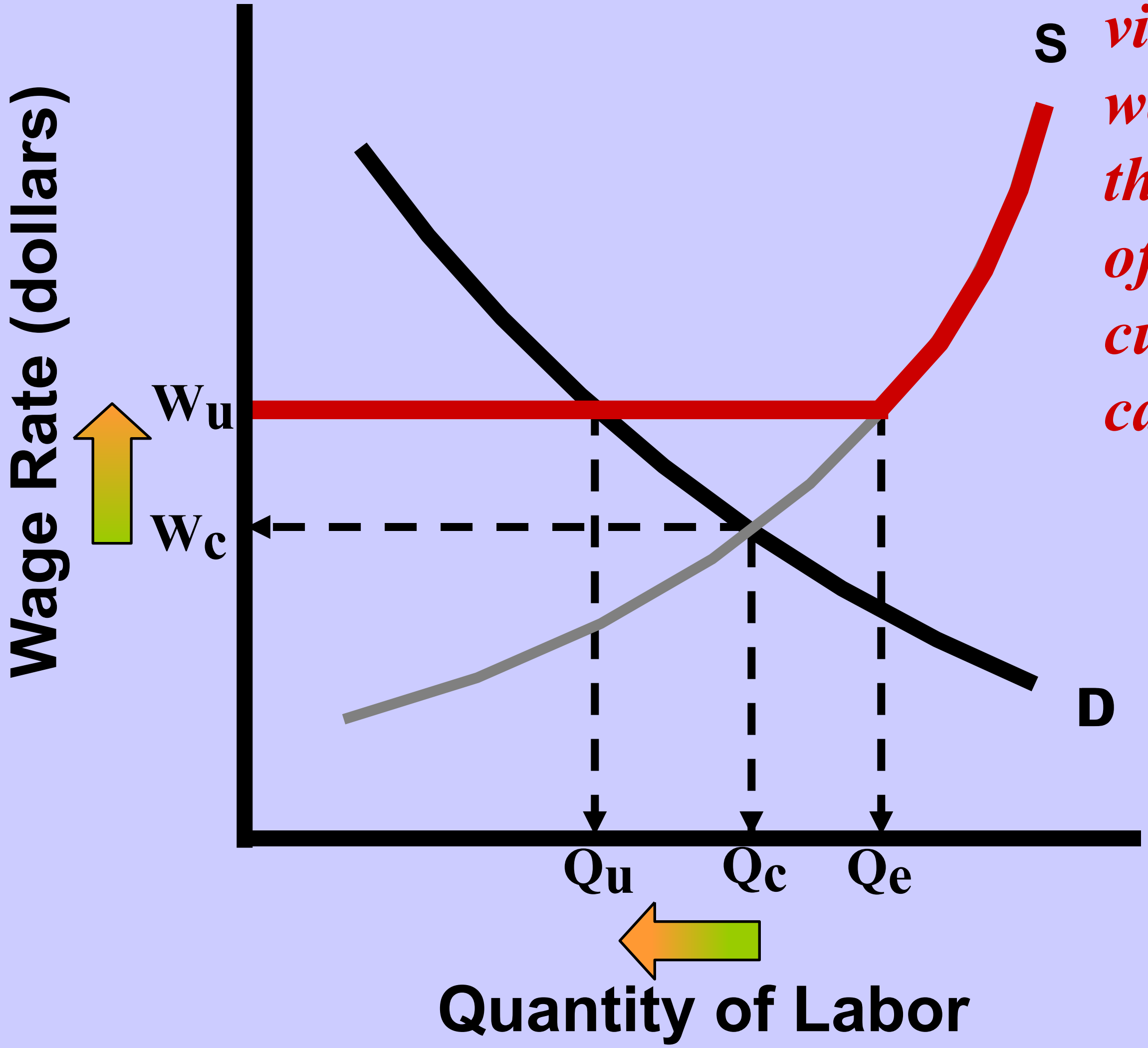
Inclusive or Industrial Model

...by organizing virtually all workers and thereby control of the supply curve for labor causing…



THREE UNION MODELS

Inclusive or Industrial Model



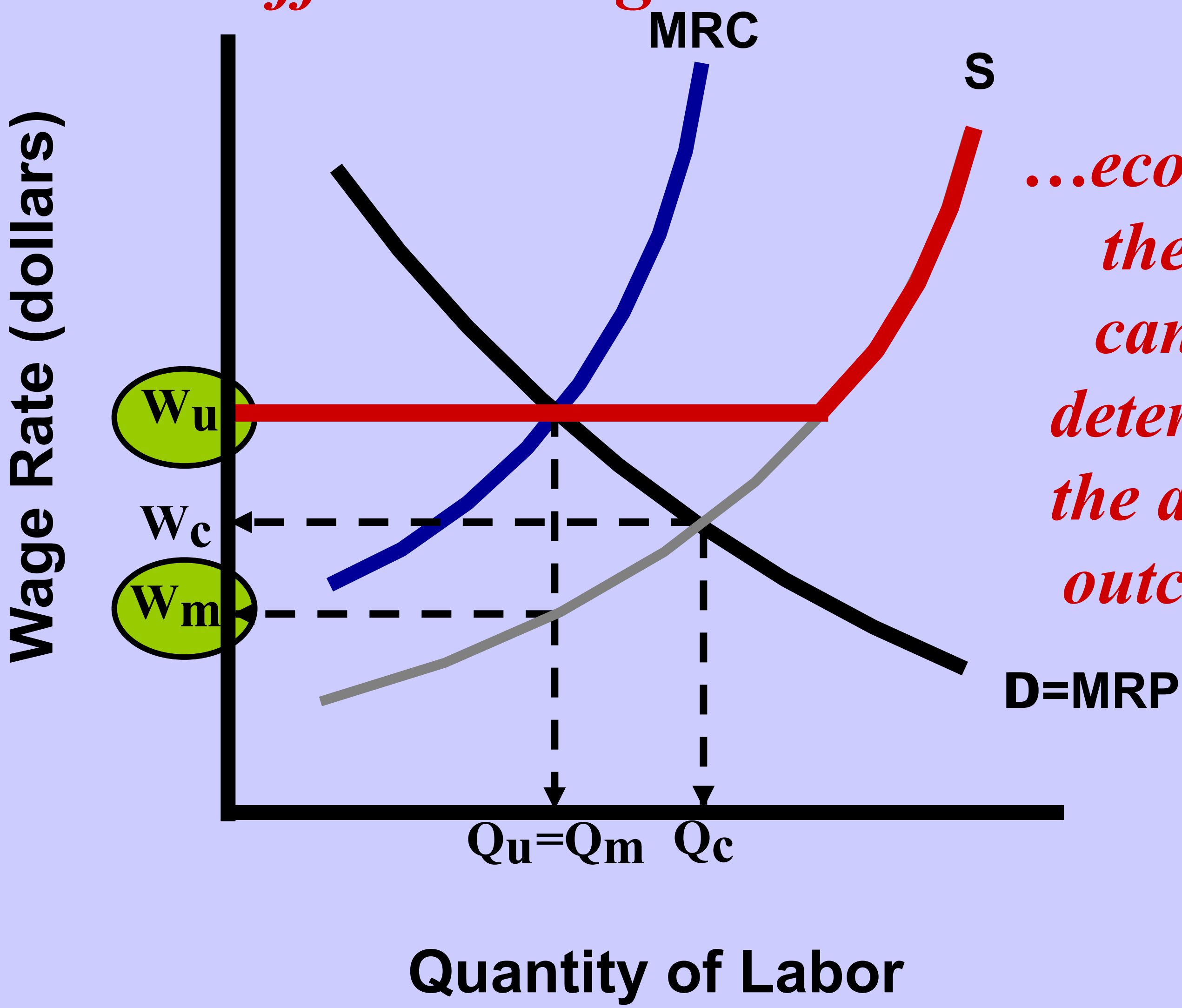
...by organizing virtually all workers and thereby control of the supply curve for labor causing...

WAGE INCREASES AND UNEMPLOYMENT

- Union members receive about 15% - 20% higher wages
- Negative impact on level of employment

BILATERAL MONOPOLY MODEL

Monopsonist & Union Seek Different Wage Rates...



...economic theory cannot determine the actual outcome.

BILATERAL MONOPOLY MODEL

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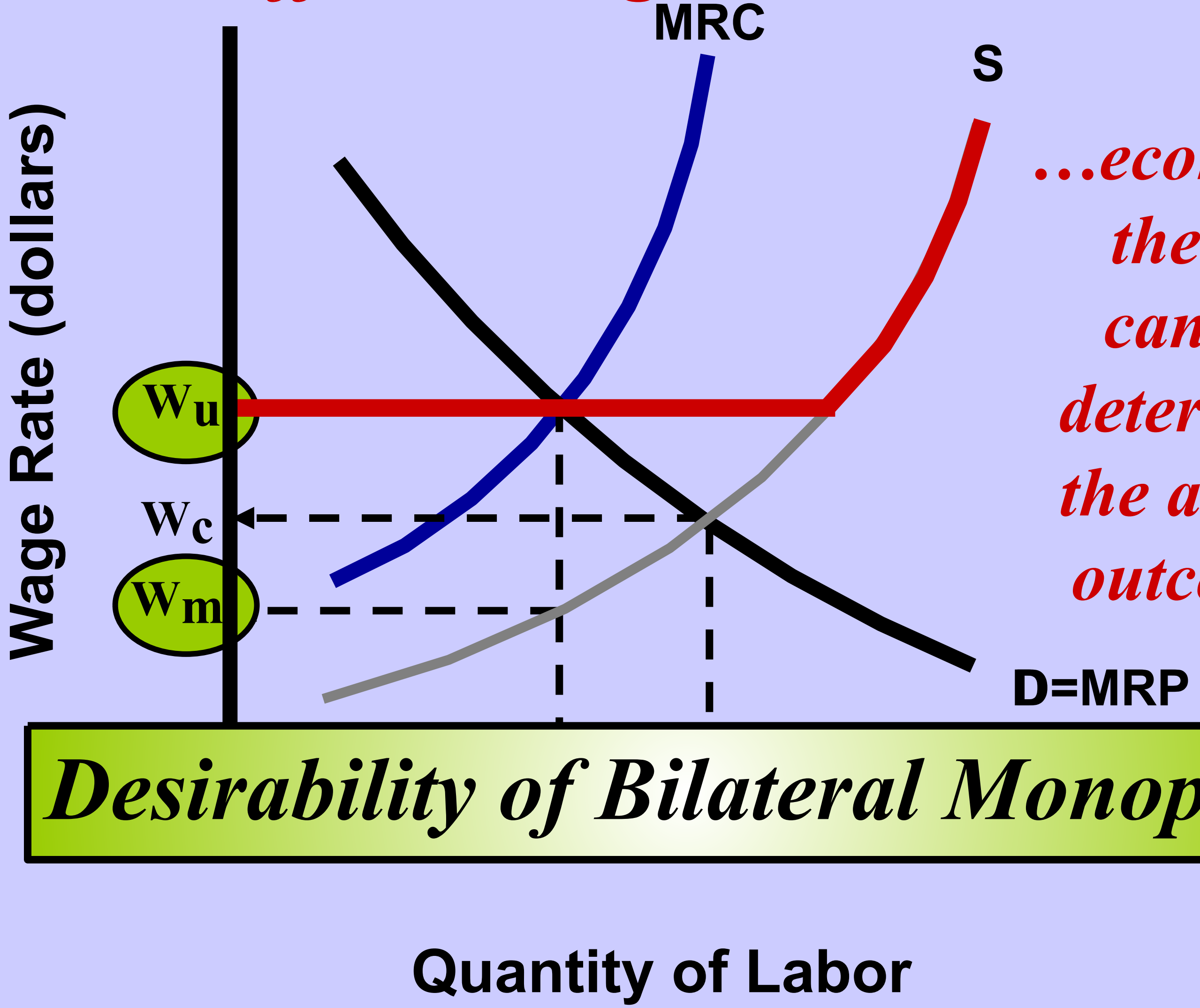


...economic theory cannot determine the actual outcome.

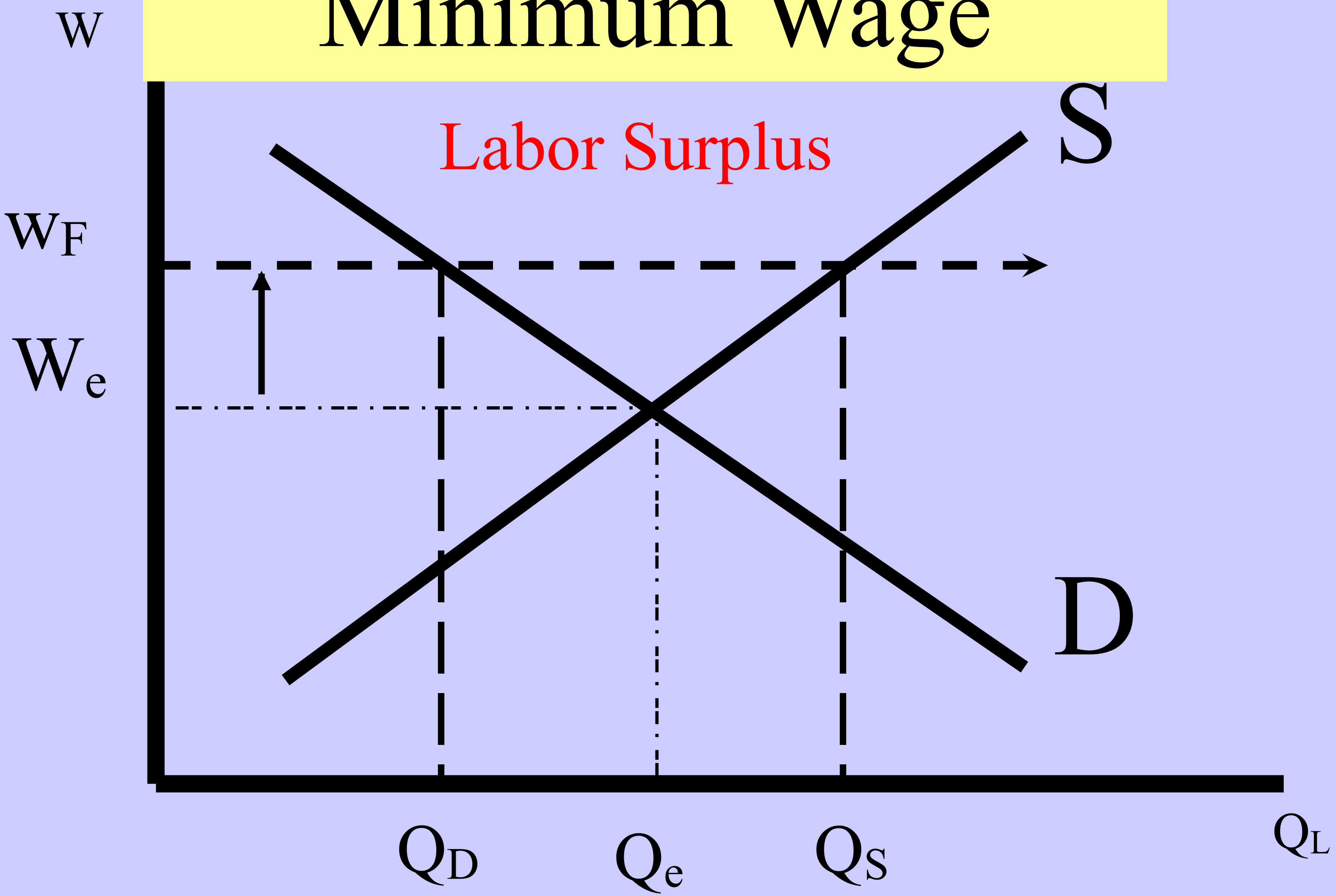
Desirability of Bilateral Monopoly

Minimum Wage Controversy

MINIMUM WAGE CONTROVERSY

- Case *Against* Minimum Wage
- Case *For* Minimum Wage
- Evidence and Conclusions

Minimum Wage



Part III: Additional Factor Market Concepts

Economic Rent

The Determination of Rent

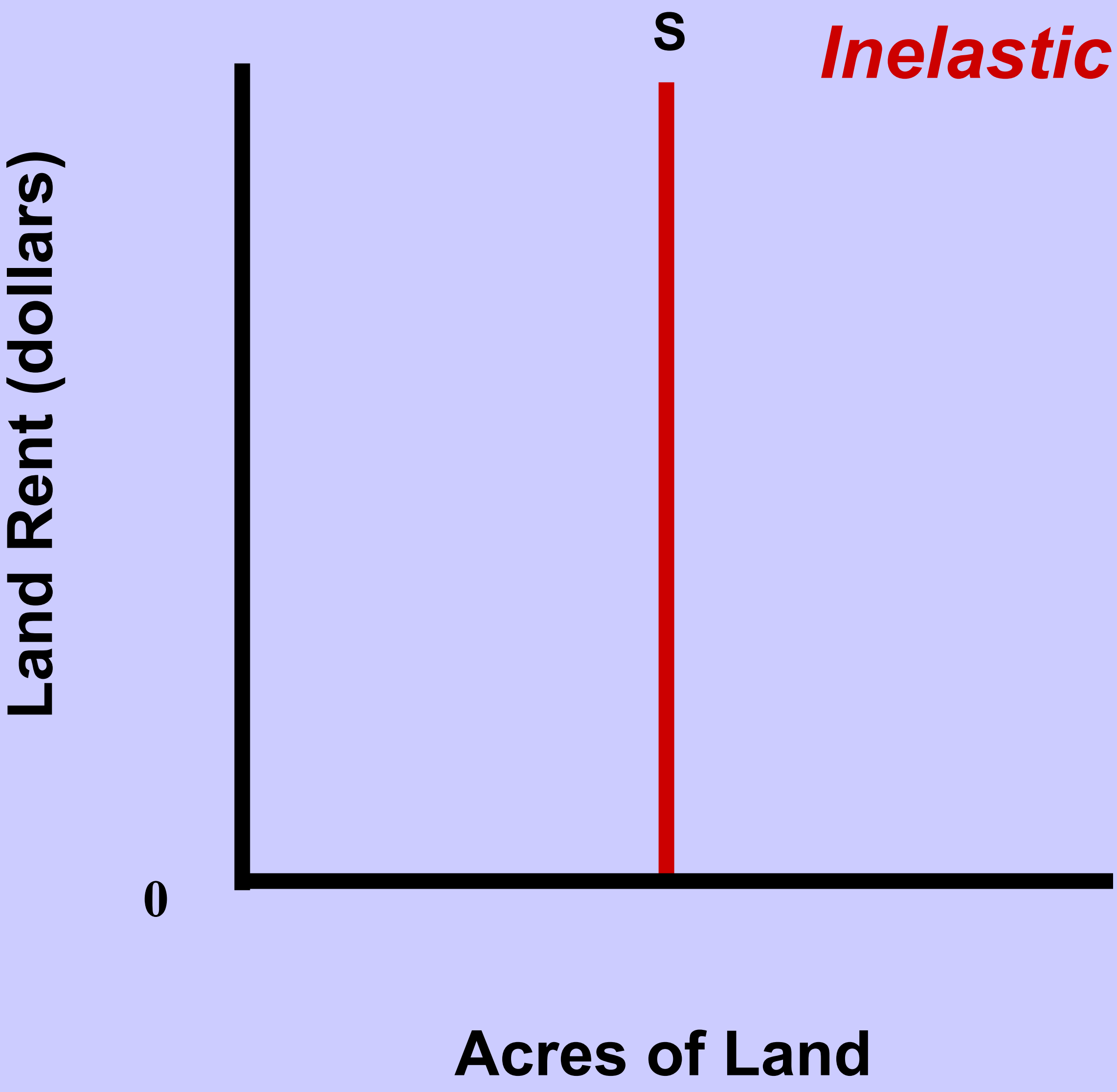
- Some resources (like land) are in fixed Supply $\Rightarrow$ Demand is the only active determinant of land rent

- ***Economic rent*** = an "extra" payment for a factor of production (such as land) that does not change the amount of the factor that is supplied

DETERMINATION OF LAND RENT

Changes in the demand for land...

Inelastic Supply...



DETERMINATION OF LAND RENT

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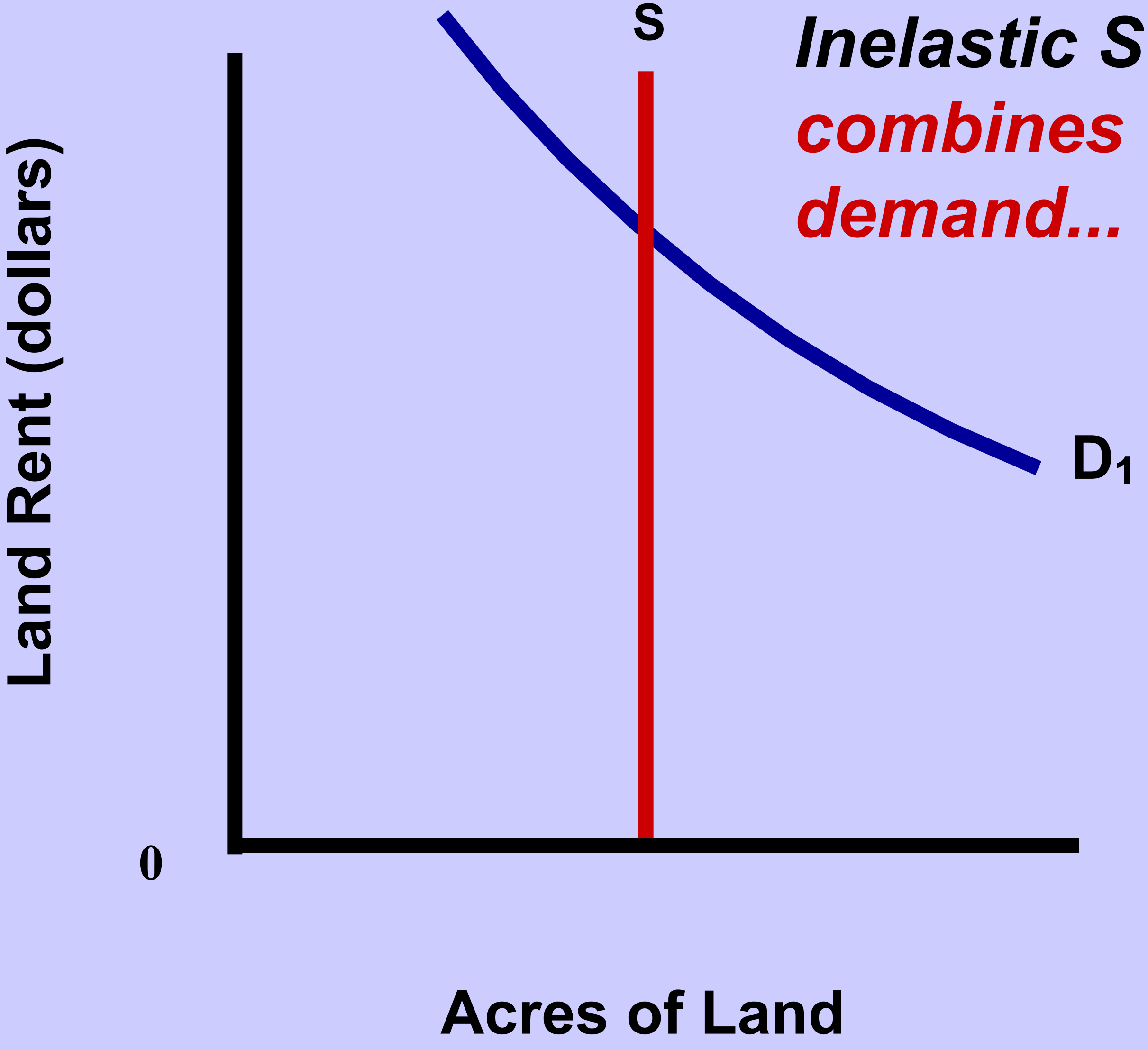
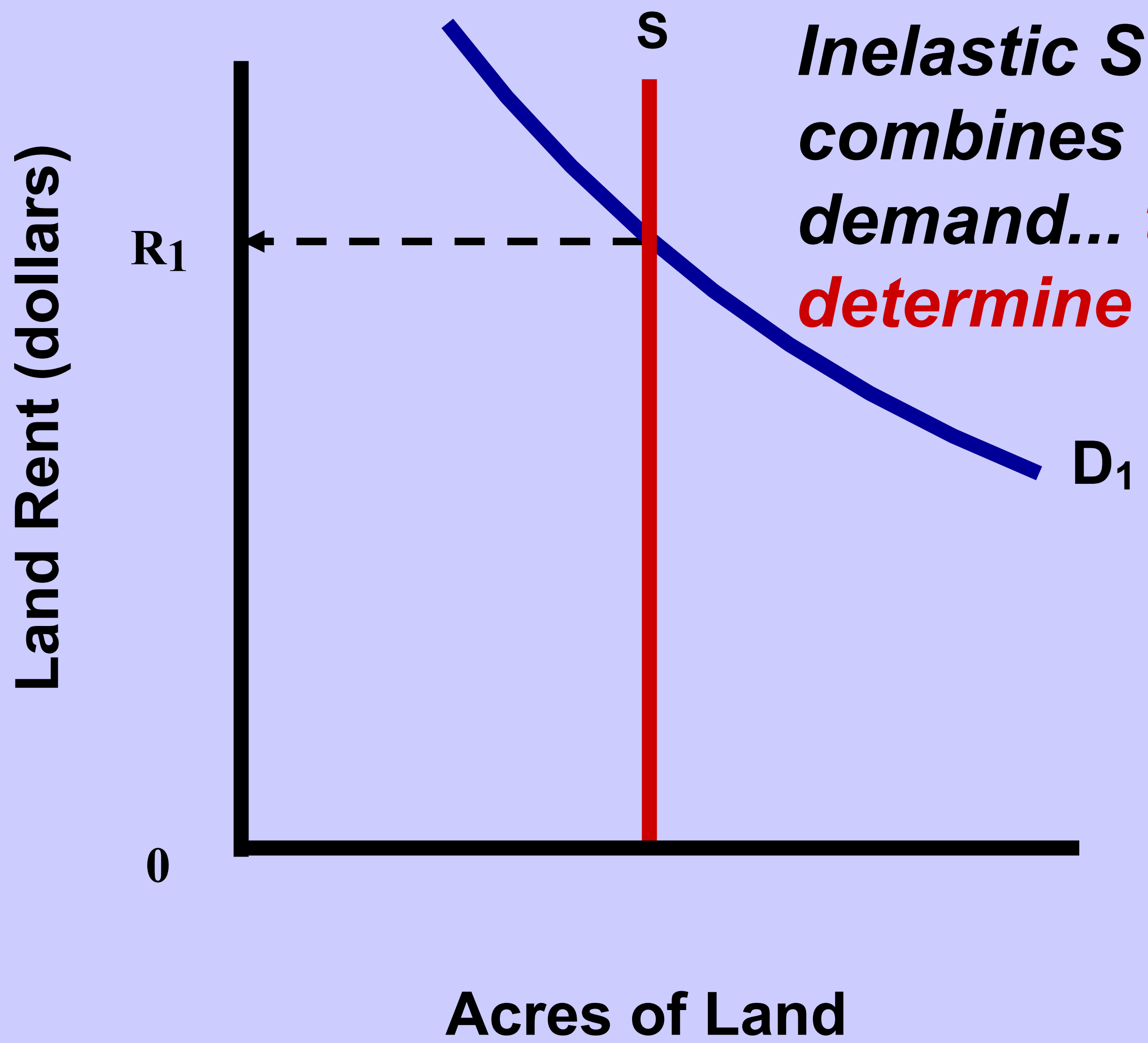


Inelastic Supply...
combines with demand...

DETERMINATION OF LAND RENT

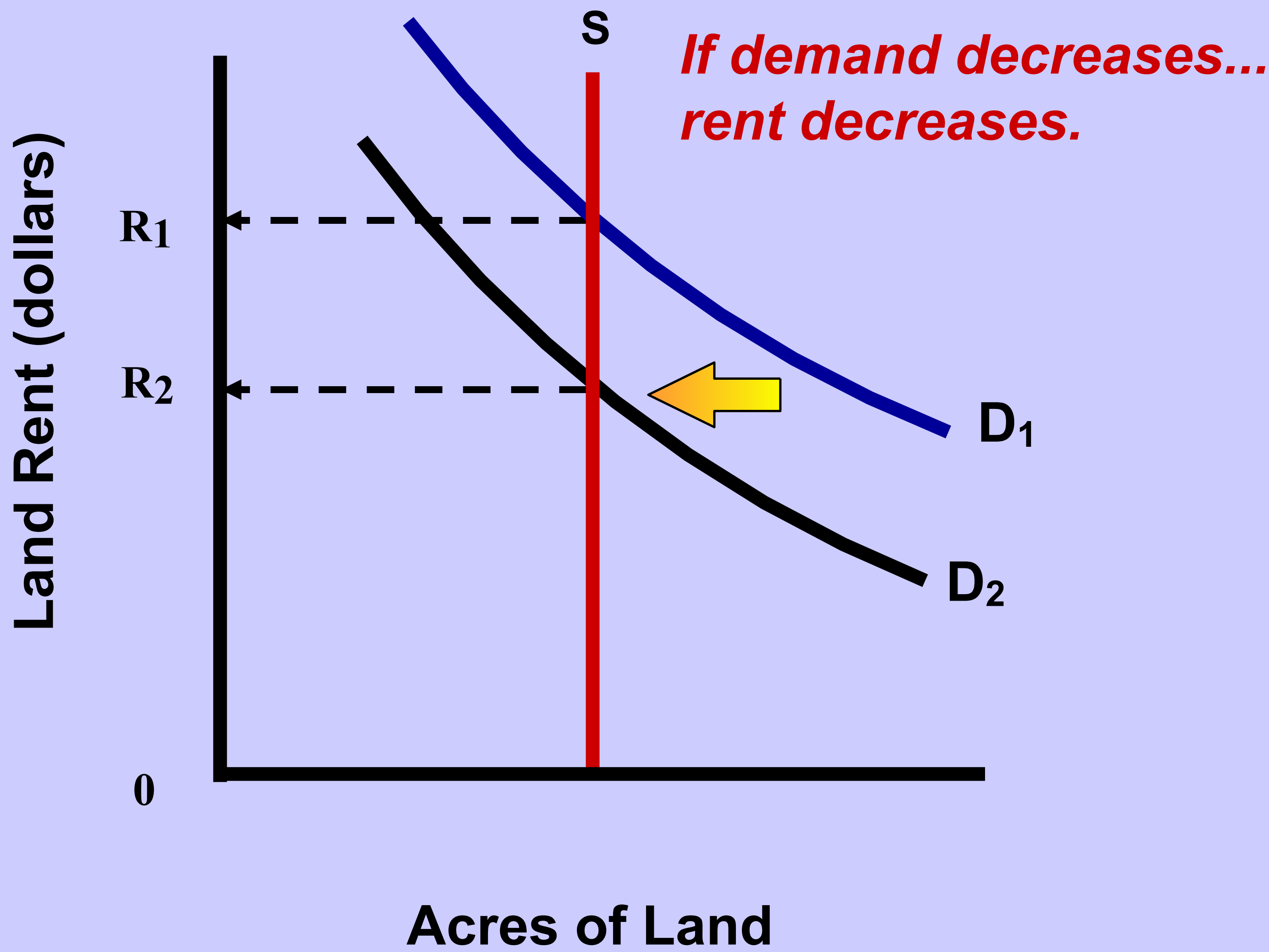
Changes in the demand for land...



Inelastic Supply... combines with demand... to determine rent

DETERMINATION OF LAND RENT

Changes in the demand for land...



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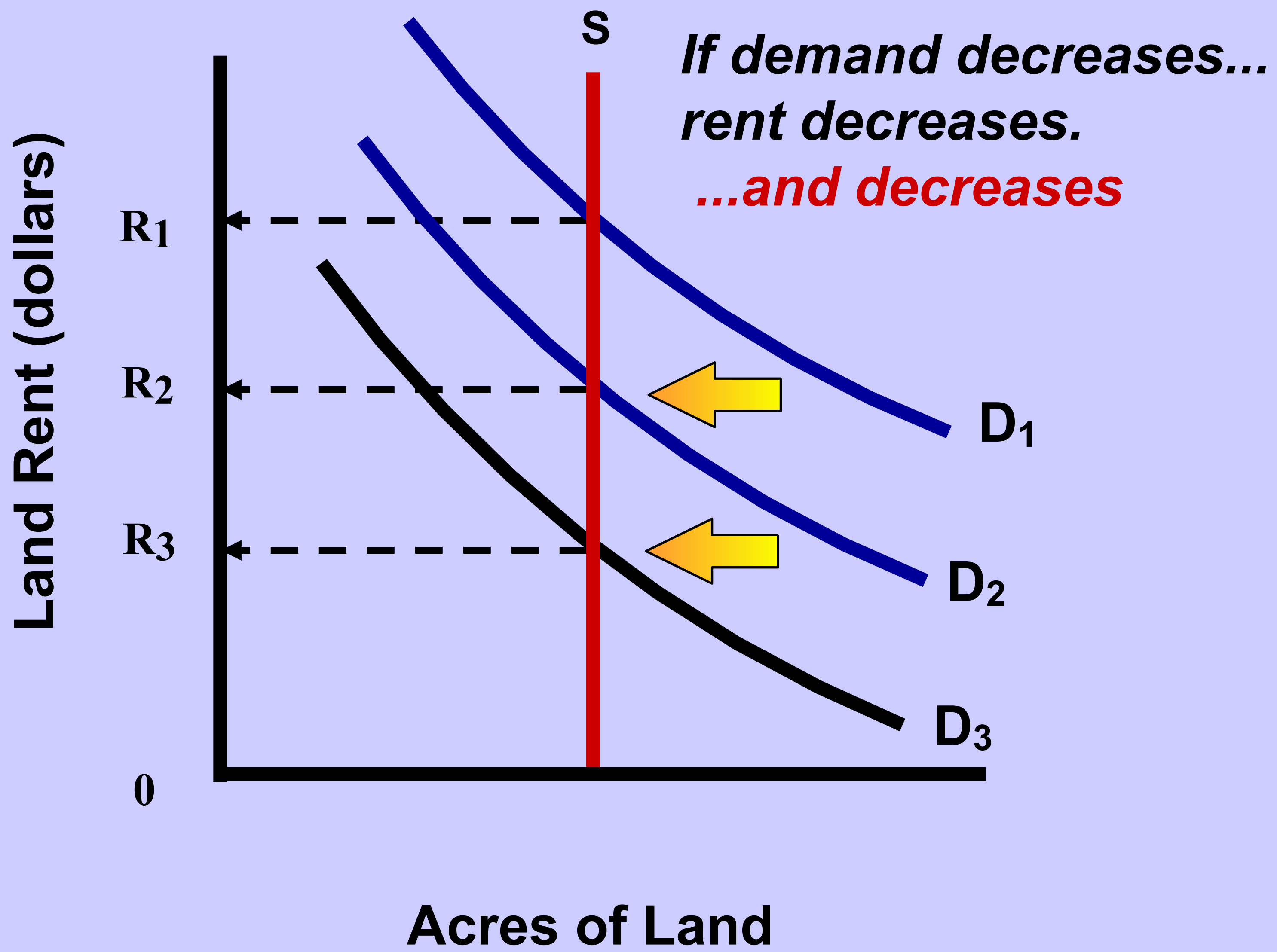

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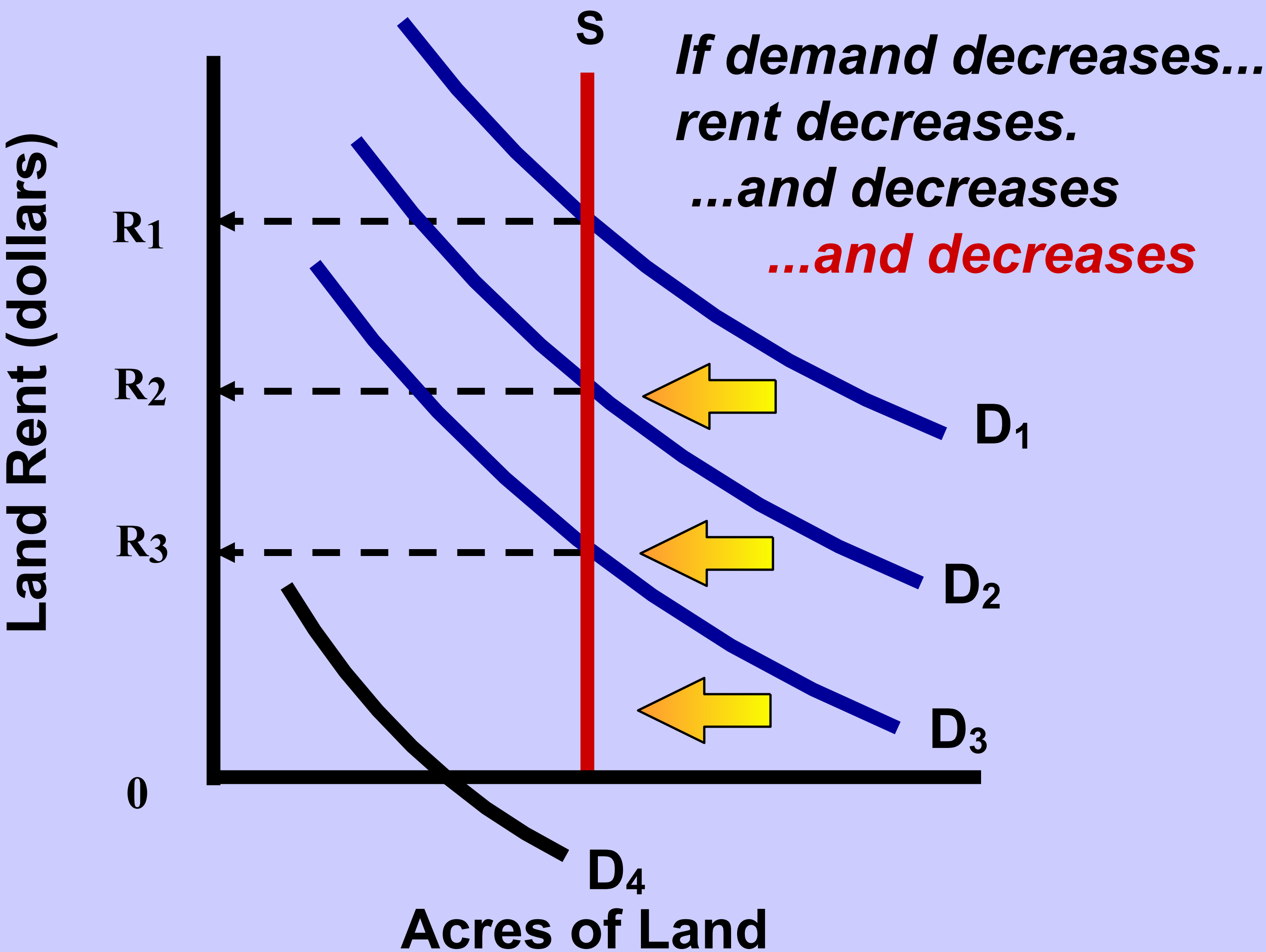
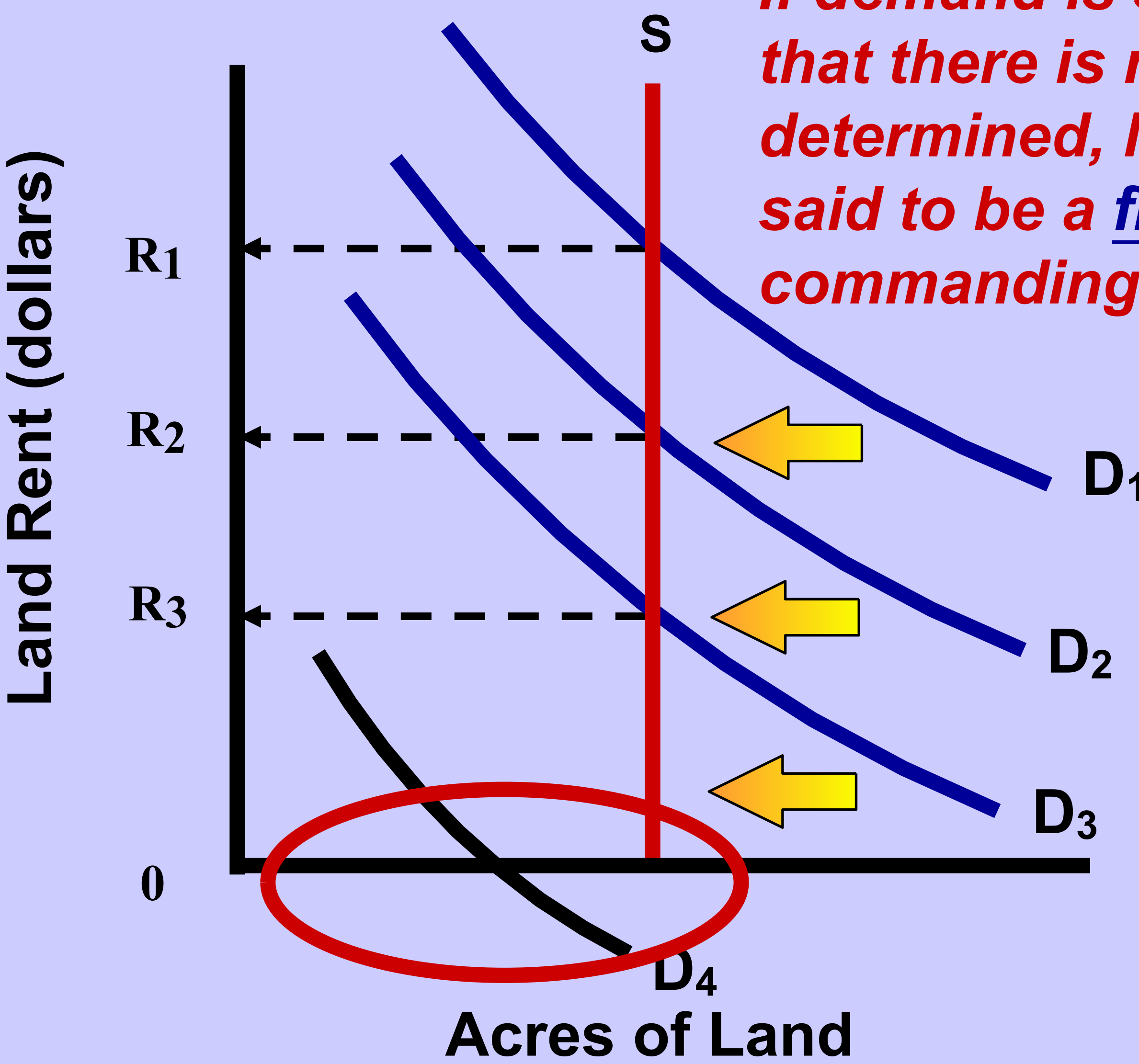


DETERMINATION OF LAND RENT

Changes in the demand for land...



*If demand is so low that there is no rent determined, land is said to be a **free good**, commanding no rent.*

The Determination of Rent

- Salaries of Professional Athletes
  - When athletes would be willing to play for quite a bit less than their salary, the “excess” salary is economic rent.
  - This same analysis applies to any factor of production whose supply curve is not horizontal.

Economic Rent and Wages

- The Rent Component of Wages
  - The concept of economic rent can explain at least part of the earnings of people whose abilities cannot (or at least not easily) be duplicated.

Entrepreneurship & Profit

Payments to Entrepreneurship

- When economists calculate profits, they consider both *explicit* and *implicit* costs.
- Essentially, profits are what remains from revenue after all other factors have been paid.

Risk and Profit

- Insurable Risks
- Uninsurable Risks
  - Changes in Economy
  - Structural Changes
  - Government Policy
  - Rival Producers

SOURCES OF ECONOMIC PROFIT

1) Popular new products

2) Reduce production costs below rivals

3) Create a profitable monopoly

Normal Profit

- Entrepreneurs will compare their current *accounting* profit to the **normal profit** that they could be making in another line of business.

- If their *accounting* profit is less than their normal profit, the entrepreneurs would be incurring an economic loss *(and should employ their entrepreneurial ability elsewhere)*

A final clarification on resources…

Money is NOT a resource!!! You cannot directly produce any goods or services with it.

Money can, however, be used to fund the acquisition of productive resources!