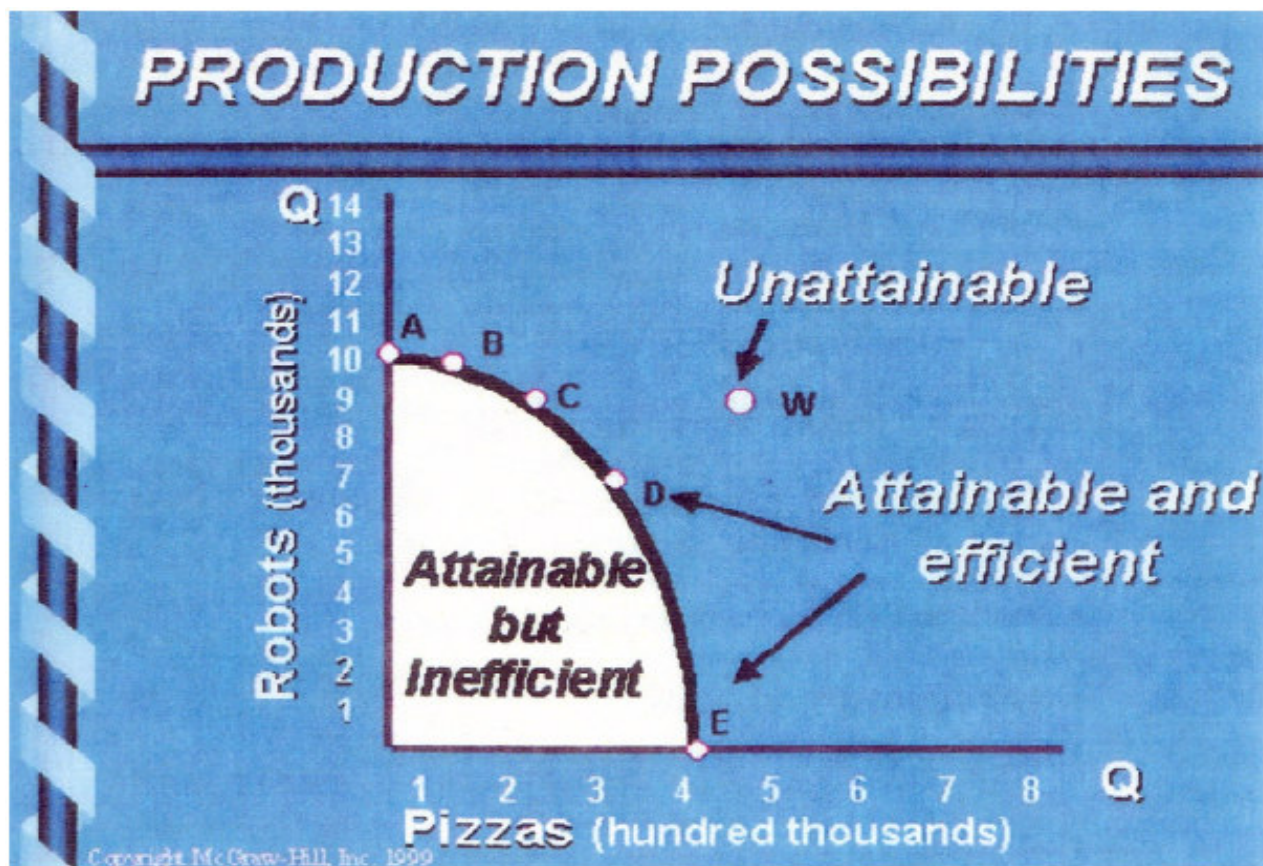


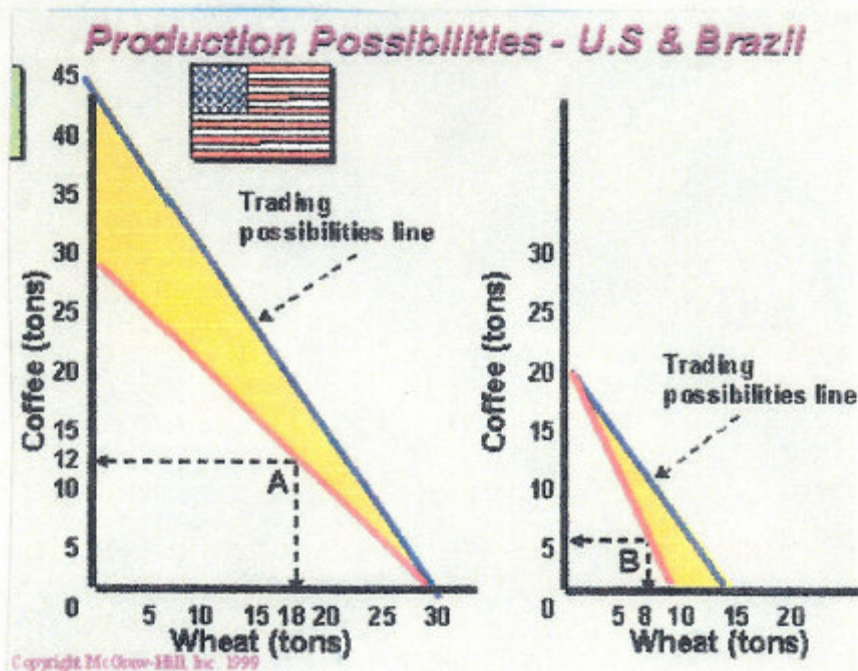
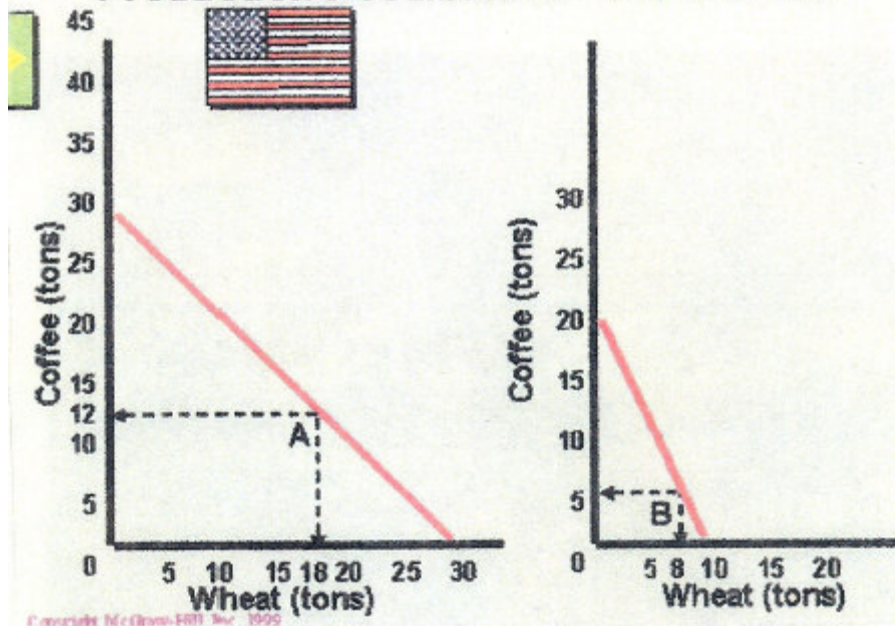
Microeconomics – Key Graphs

- Production Possibility Frontier
(opportunity cost, international trade)
- Circular Flow Model (w/ three factor circular flow)
- Market Supply & Demand
(marginal cost, marginal utility)
- Short run production relationships
- Short run perfect competition model – market and firm
(short run cost curves)
- Long run in perfect competition
- Monopoly model and natural monopoly model
(long run average total cost curve)
- Monopolistic competition model
- Pay off matrix – duopoly – game theory
- Perfect competition in the resource market – market & firm
- Monopsony
- Least-Cost Rule/Profit Maximizing Rule
- Externalities

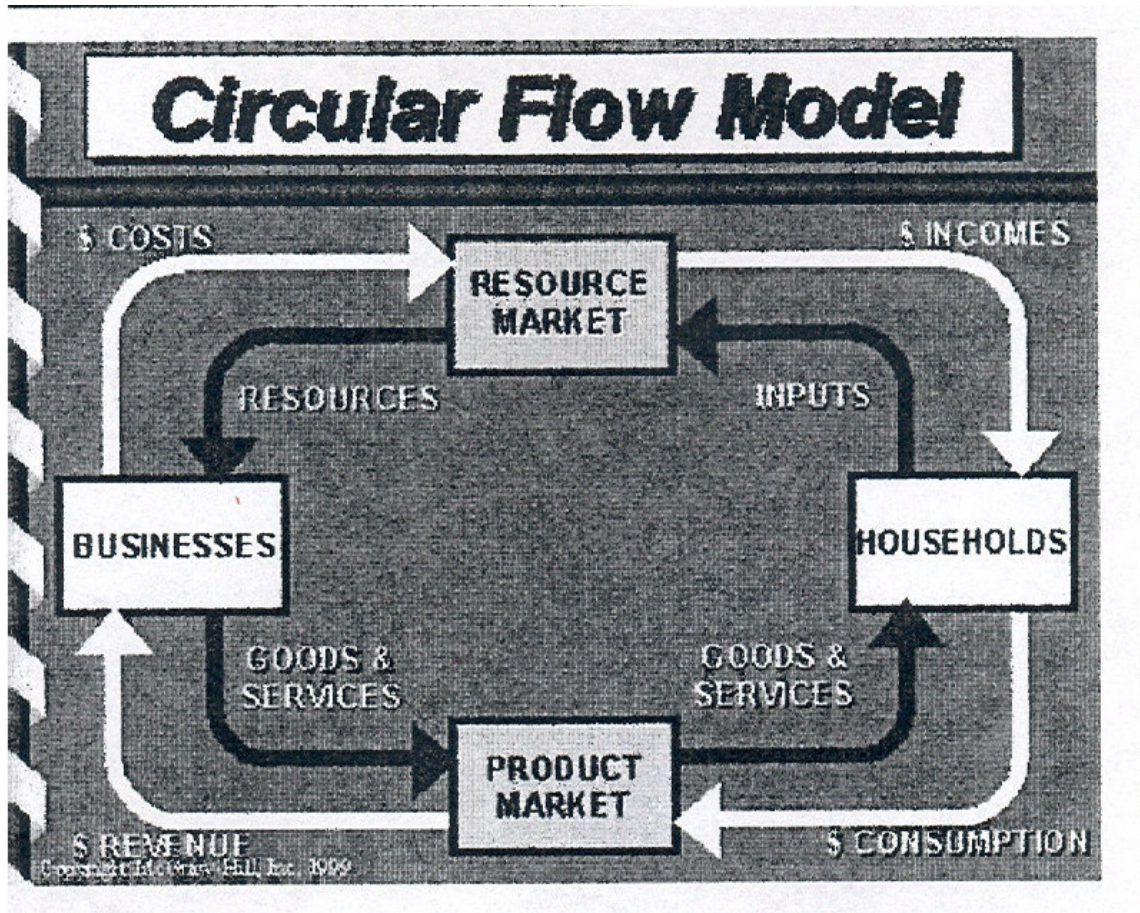
Production Possibility Frontier



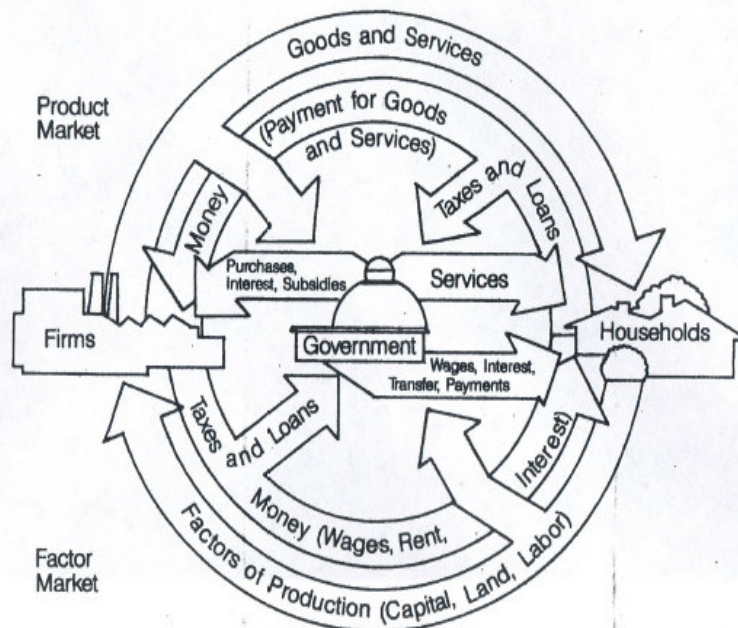
Production Possibilities - U.S. & Brazil



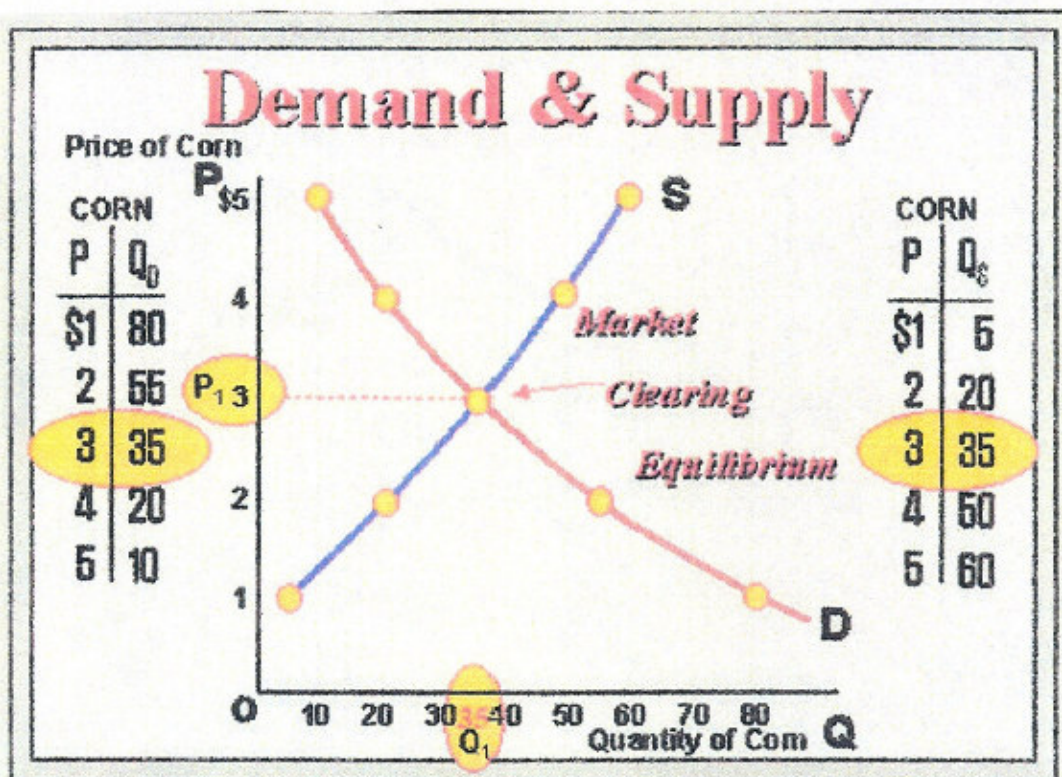
Circular Flow Model



THREE-FACTOR CIRCULAR FLOW



Market Supply and Demand



Determinants of Demand

Changes in:

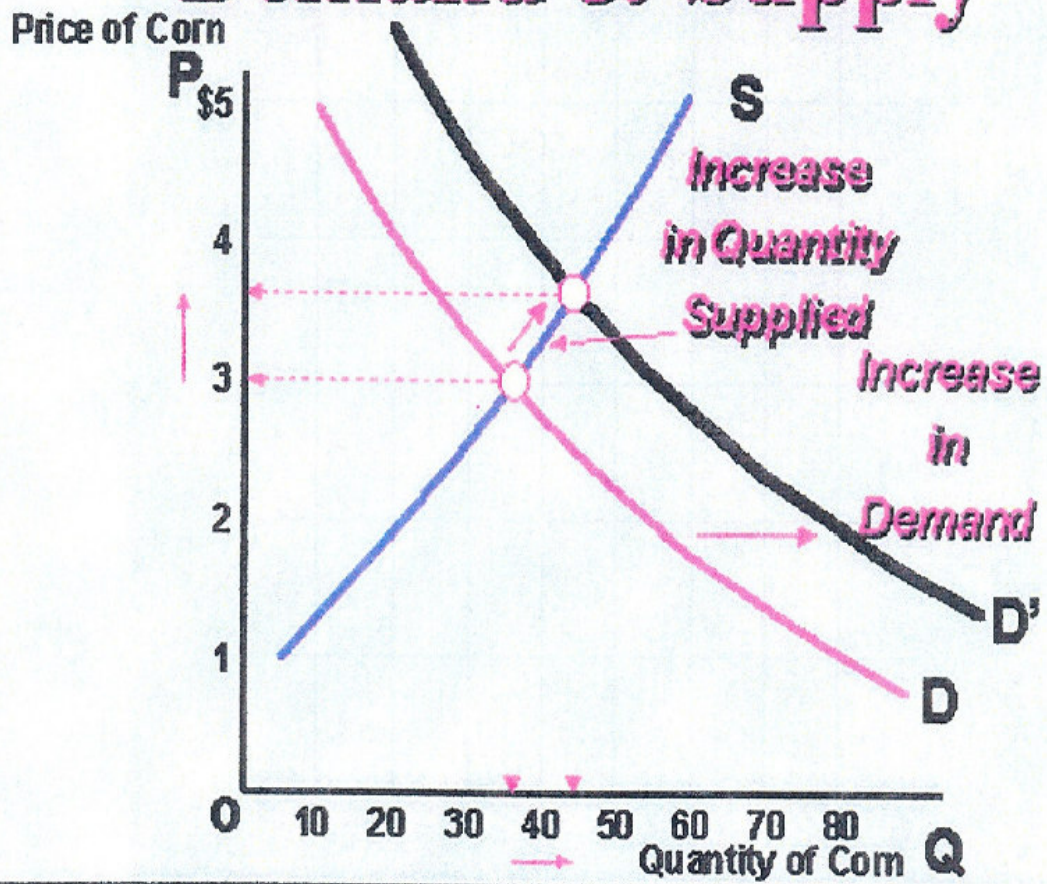
Consumer taste & preference
 Consumer income
 Market size (number of buyers)
 Consumer expectations
 Price of related goods -
 (substitutes or complements)

Determinants of Supply

Changes in:

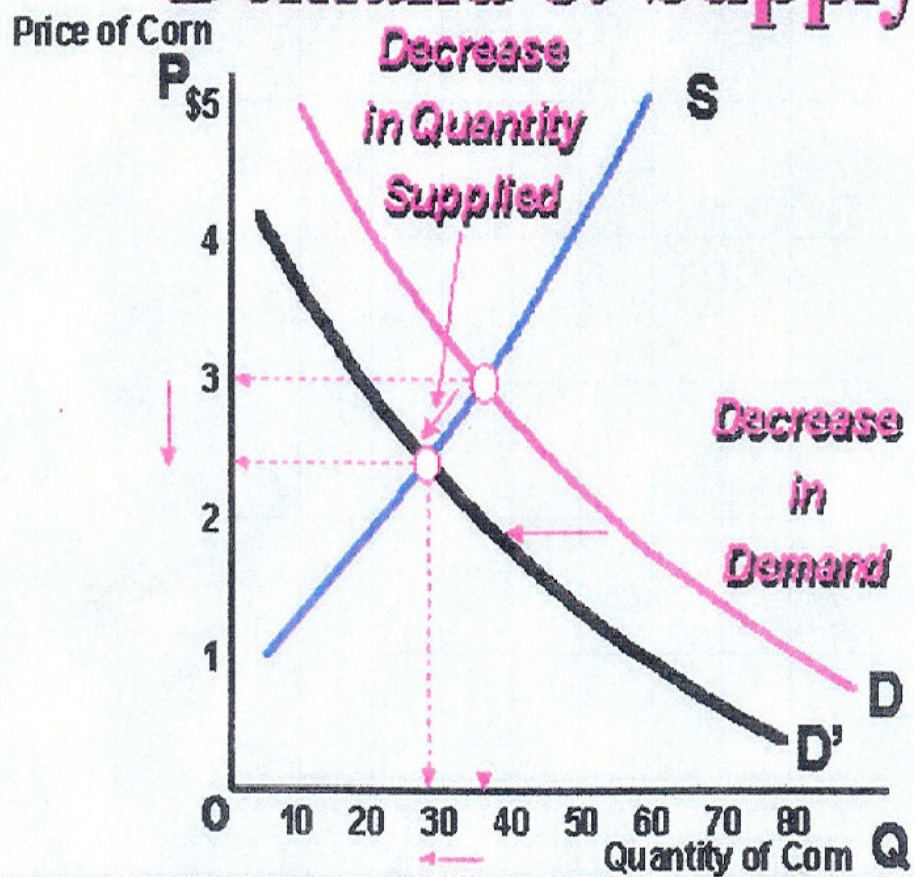
Resource prices
 Technology
 Taxes and Subsidies
 Market Competition
 (number of sellers)
 Price of related goods
 Seller expectations

Demand & Supply

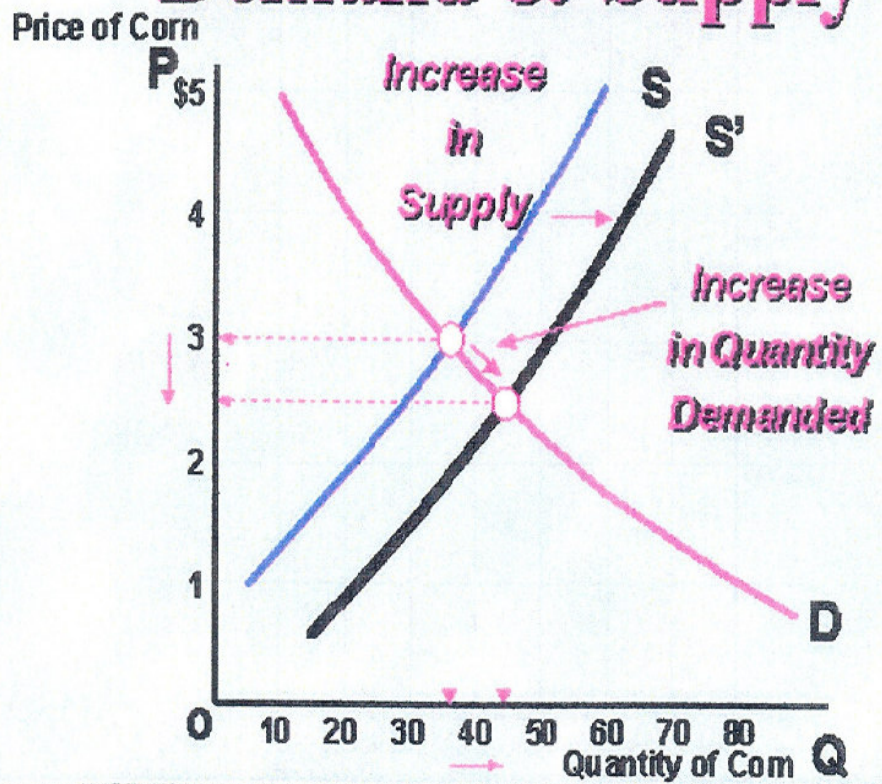


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Demand & Supply

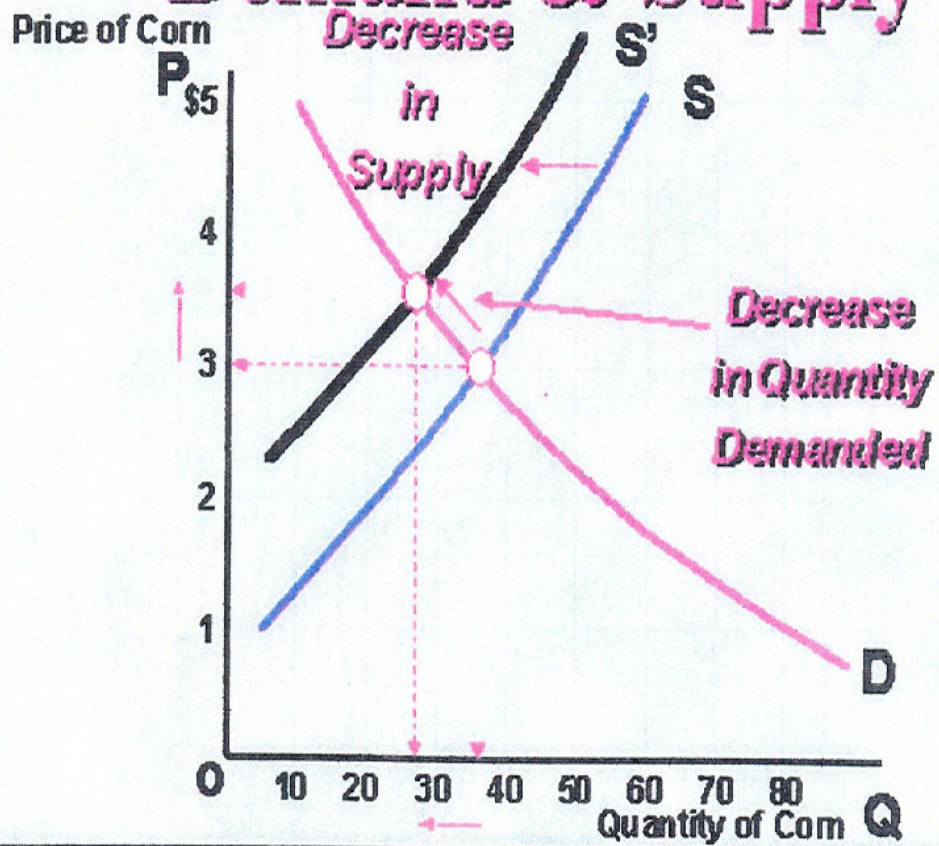


Demand & Supply



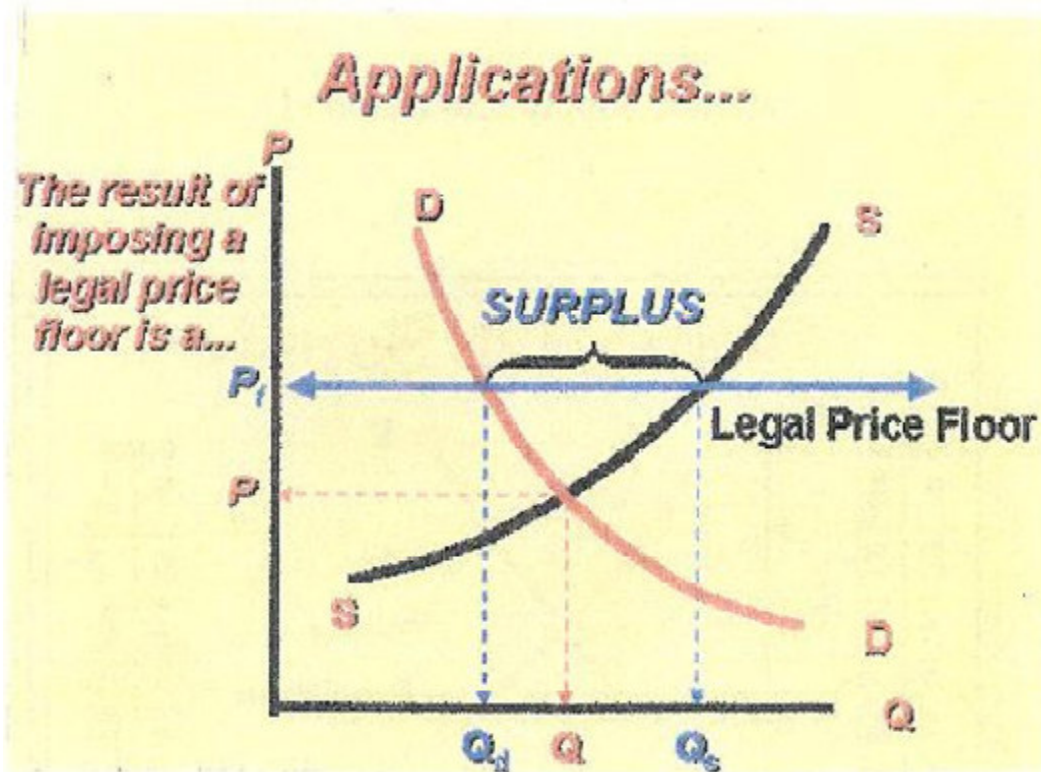
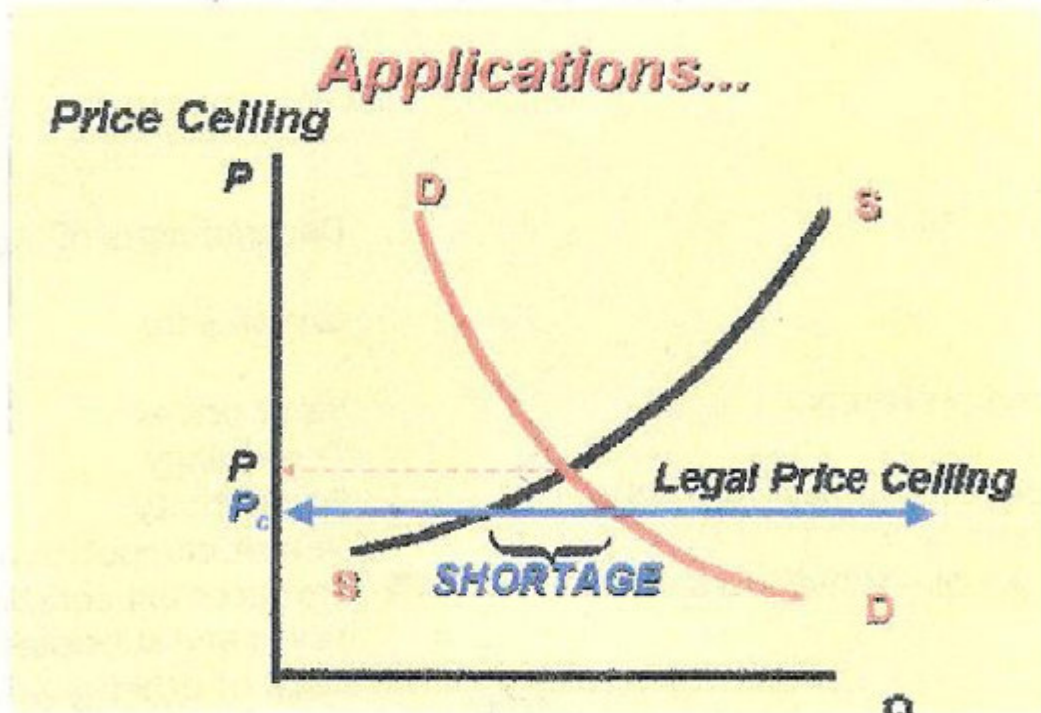
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Demand & Supply

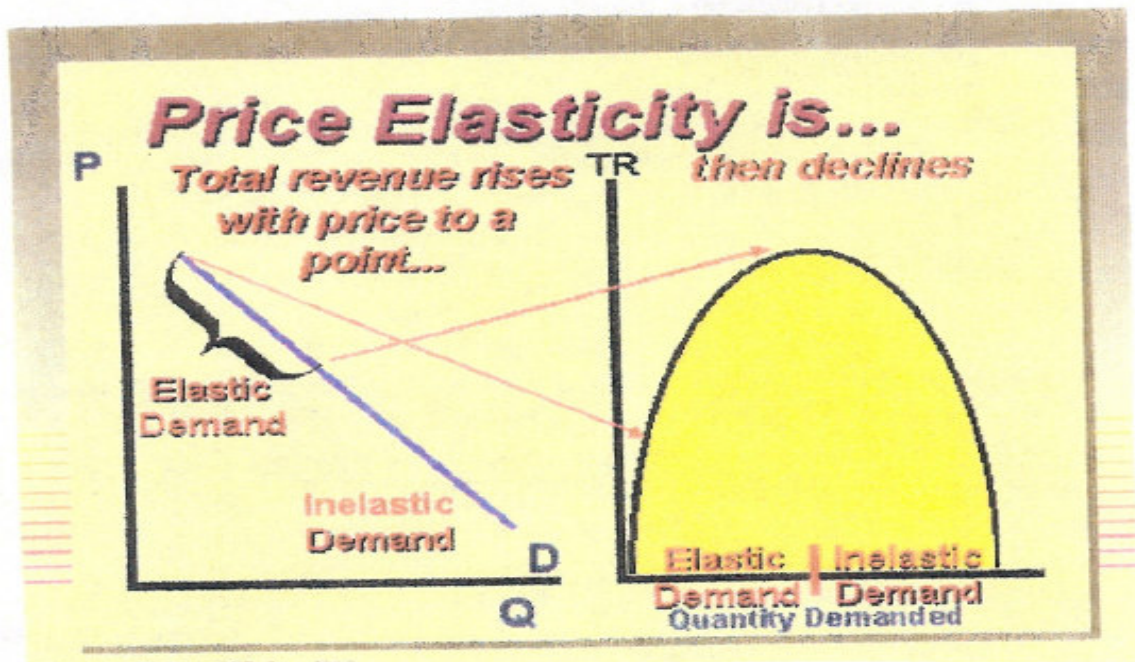
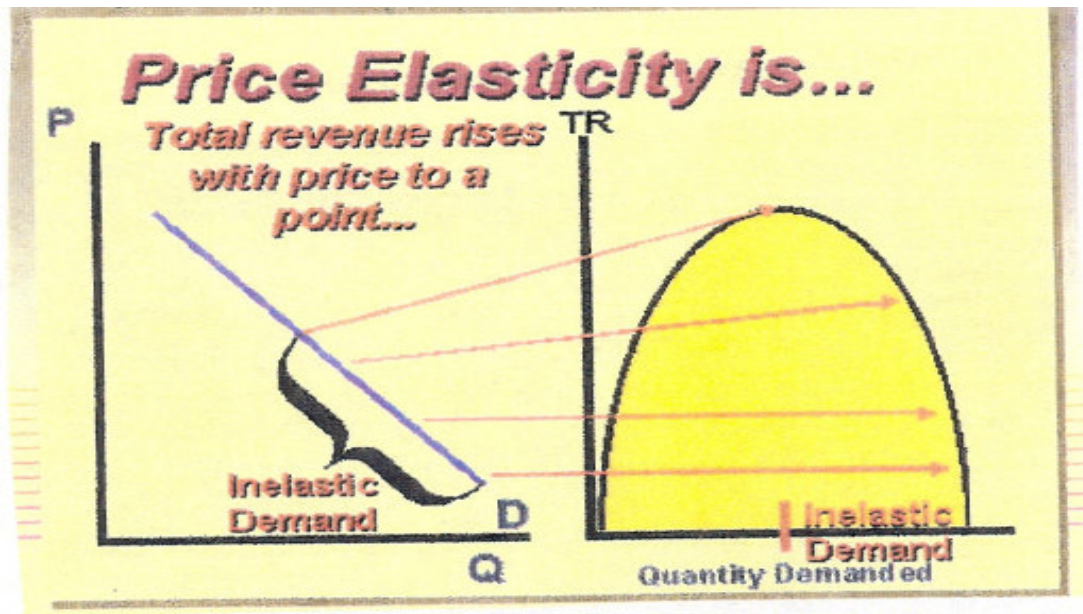


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Price Ceilings and Floors



Price Elasticity of Demand



Total Revenue Test:

$P \uparrow TR \downarrow$

$P \downarrow TR \uparrow$

Elastic Demand

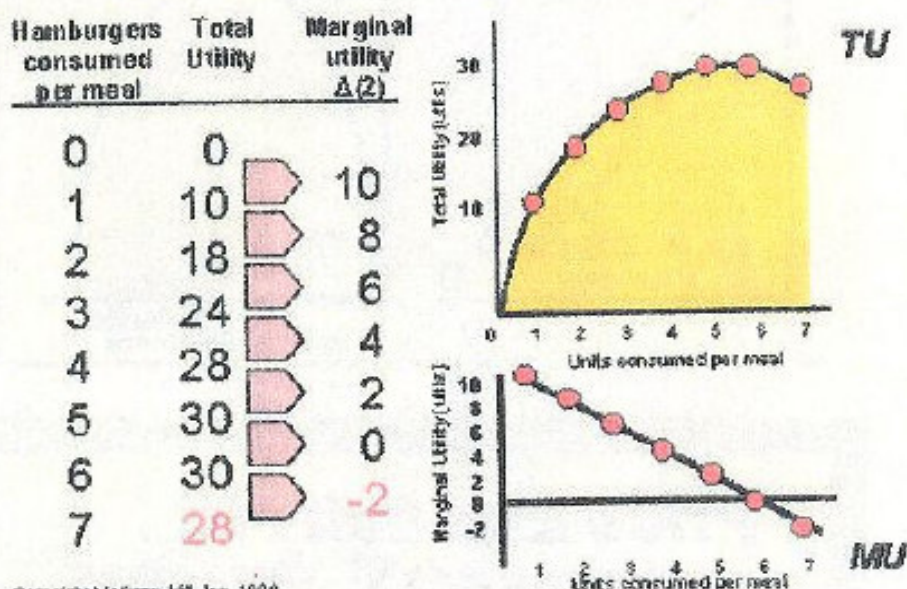
$P \uparrow TR \uparrow$

$P \downarrow TR \downarrow$

Inelastic Demand

Utility Maximization by Consumers

Total and Marginal Utility

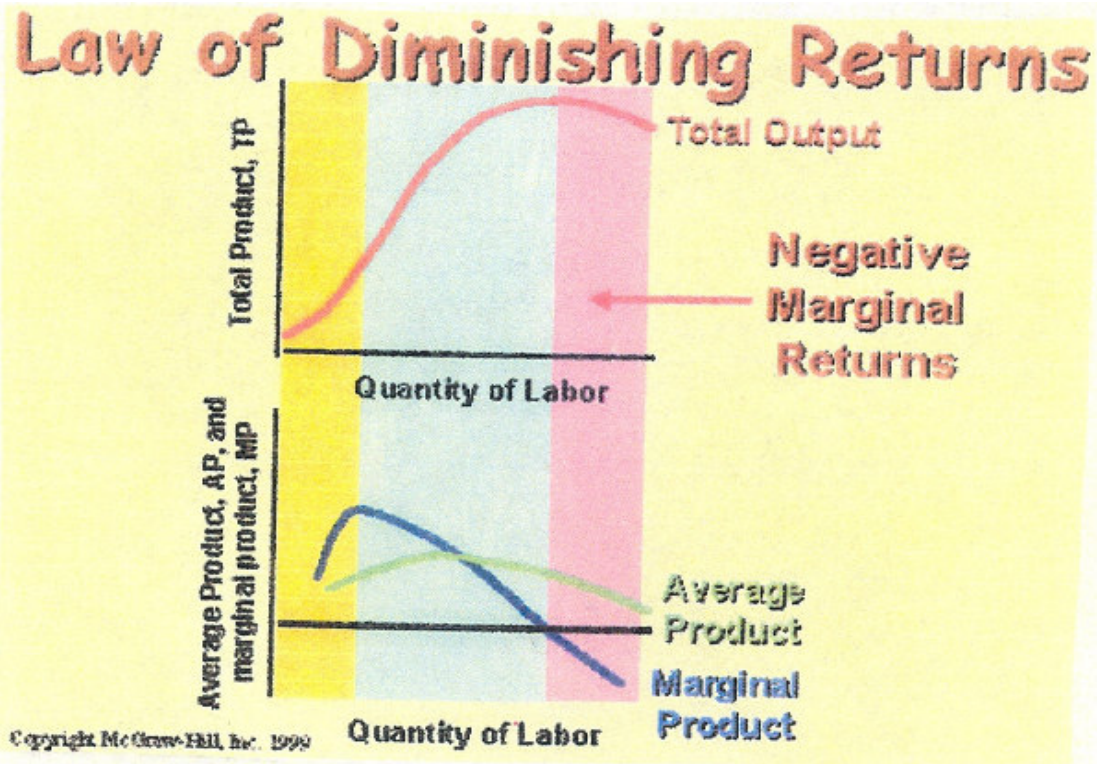


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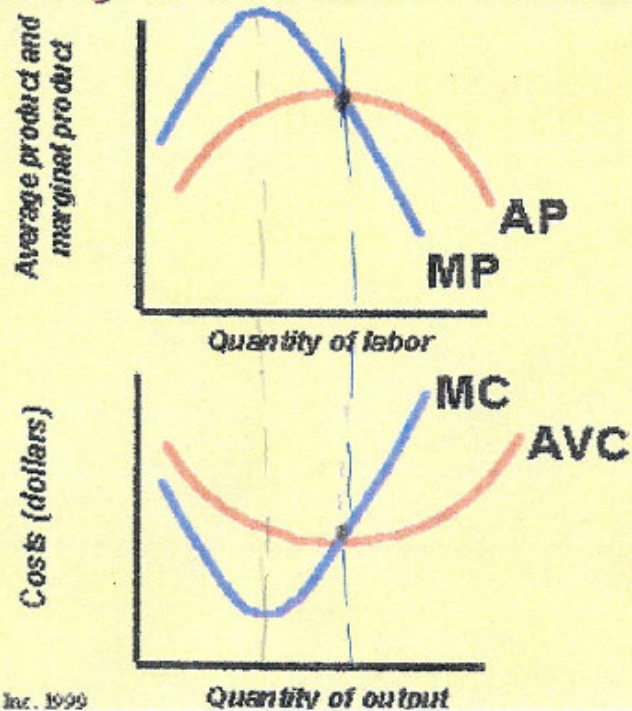
Algebraic Restatement of the Utility Maximization Rule

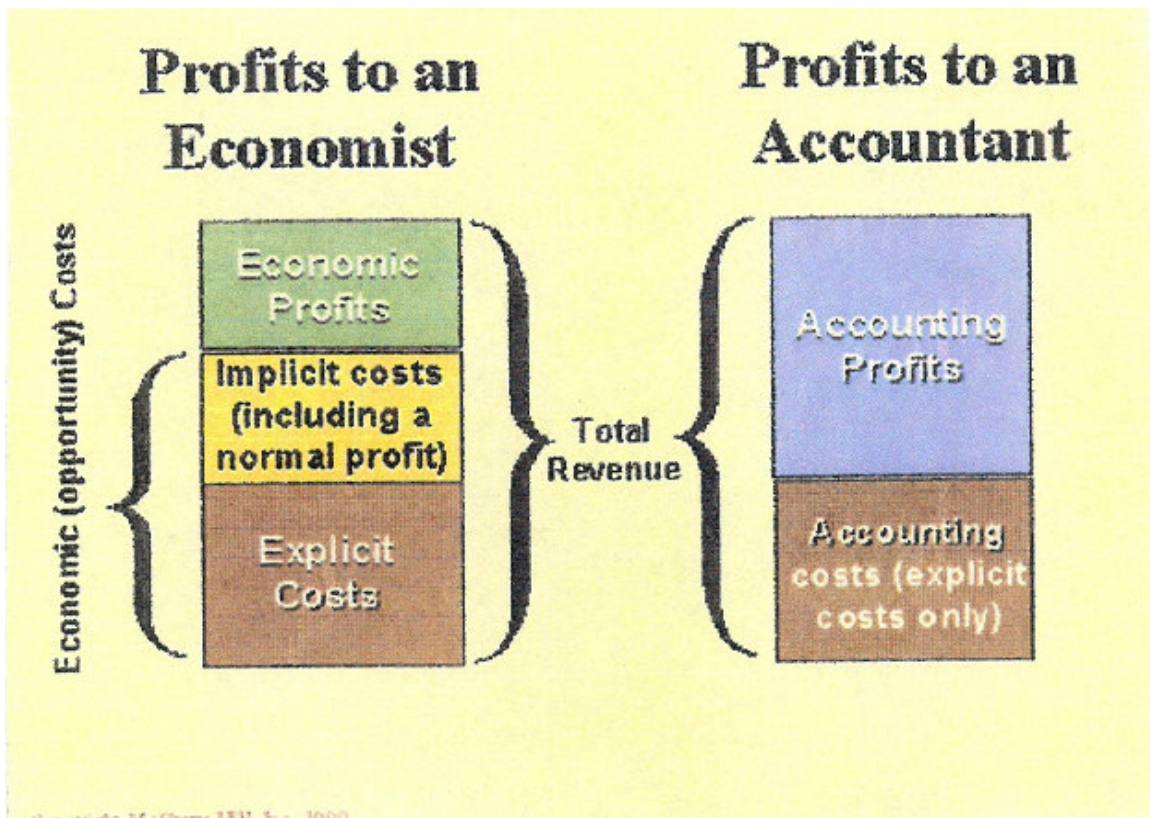
$$\frac{\text{MU of product A}}{\text{Price of A}} = \frac{\text{MU of product B}}{\text{Price of B}}$$

Short run production relationships

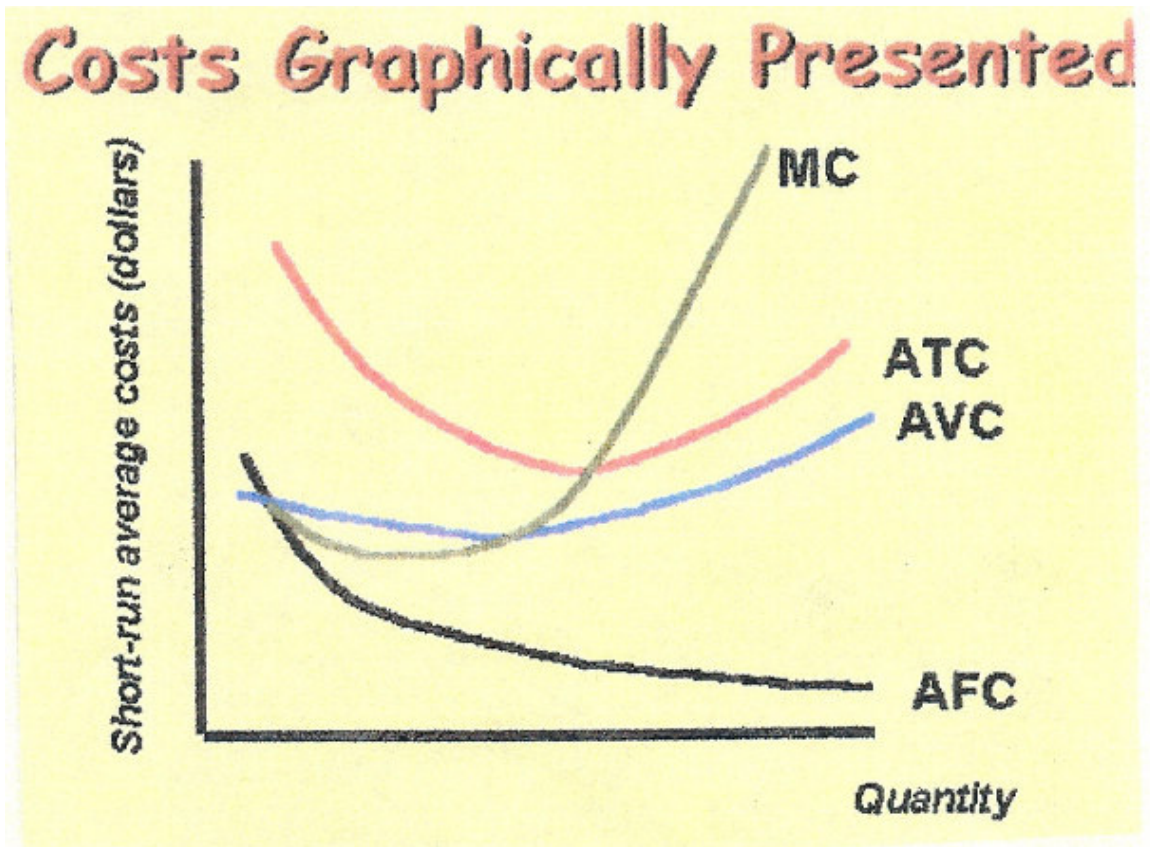


Productivity & Cost Curve Relationship

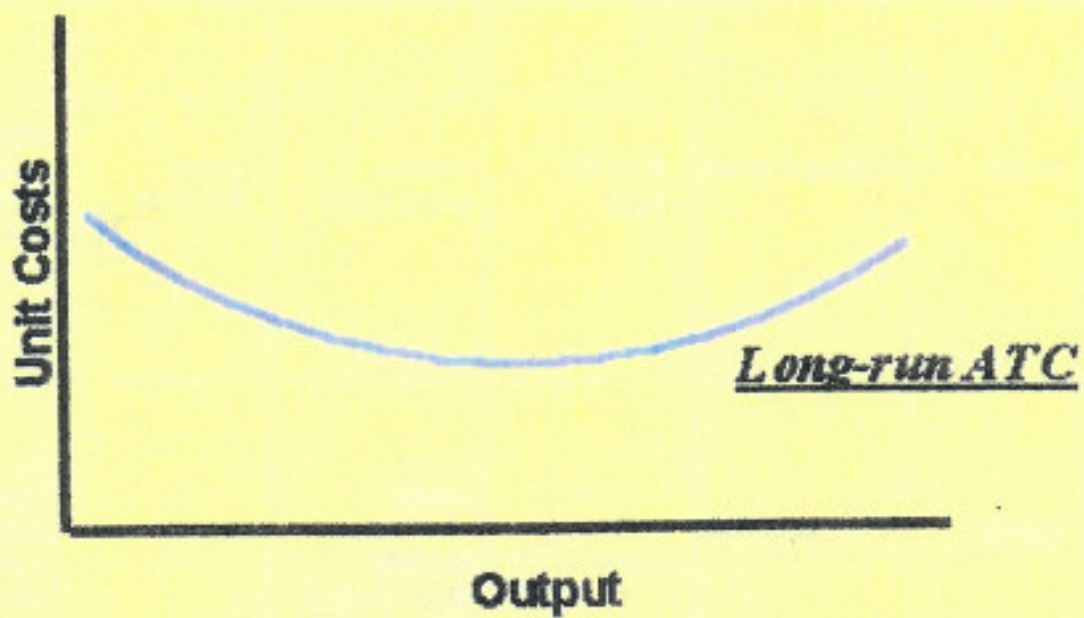




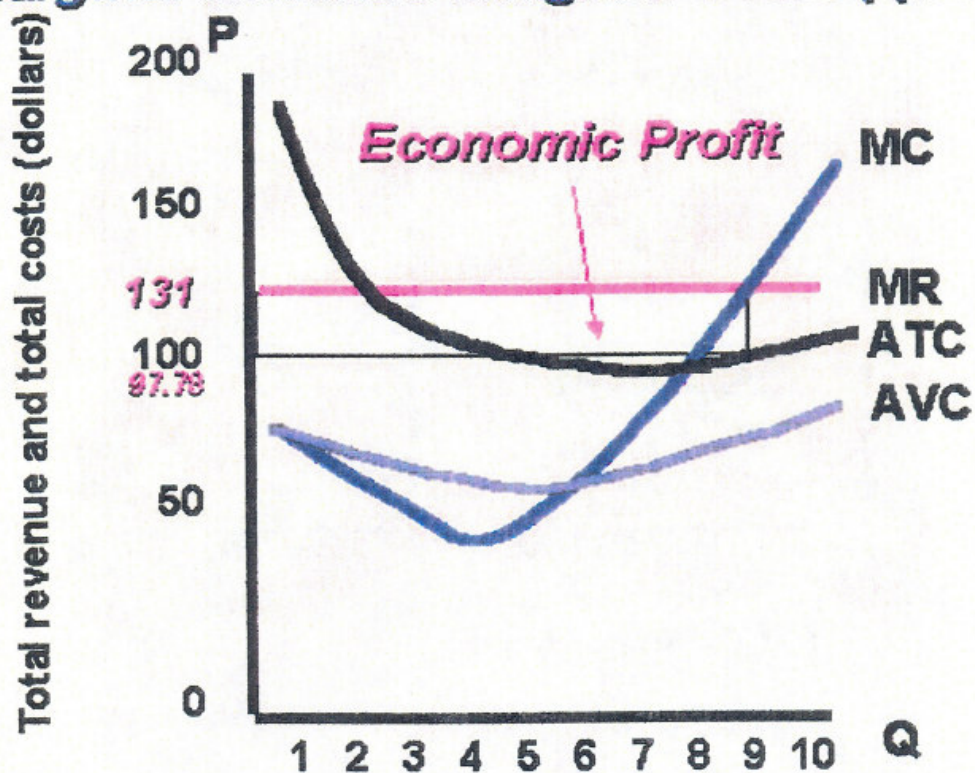
Short run cost curves



Long-run Production Costs

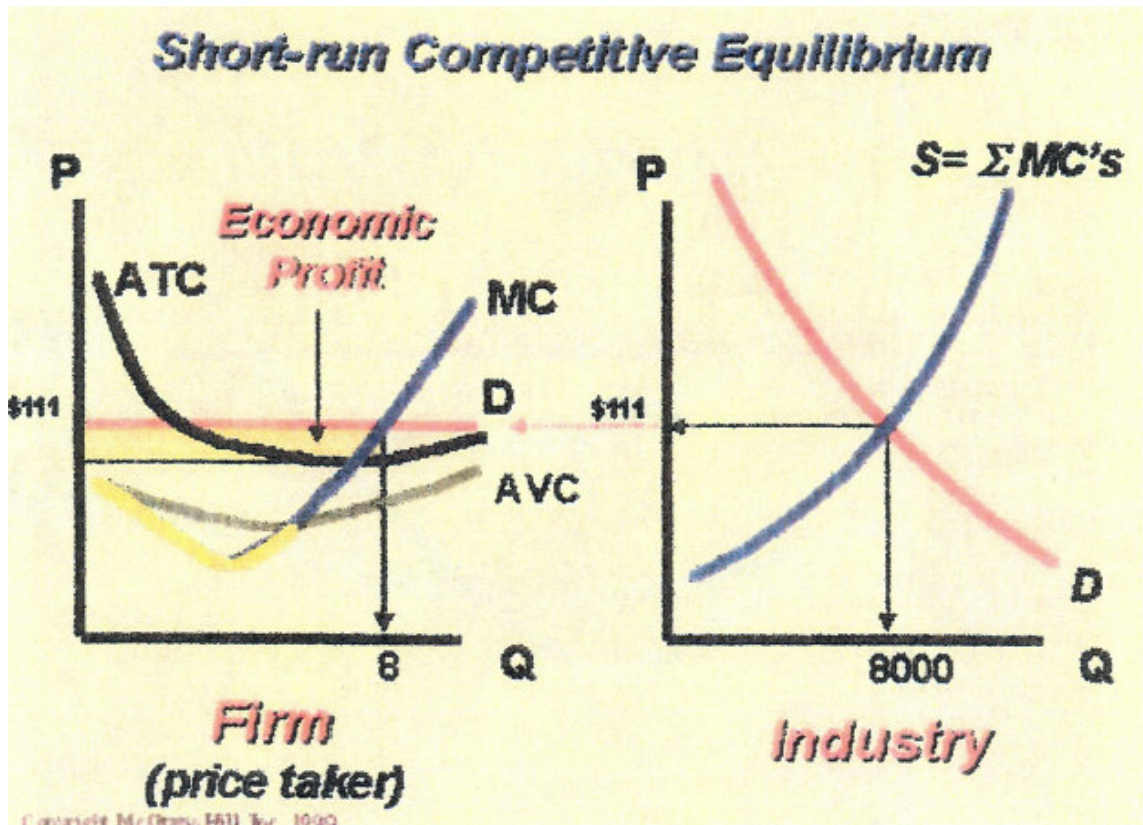


Marginal-Revenue-Marginal Cost Approach



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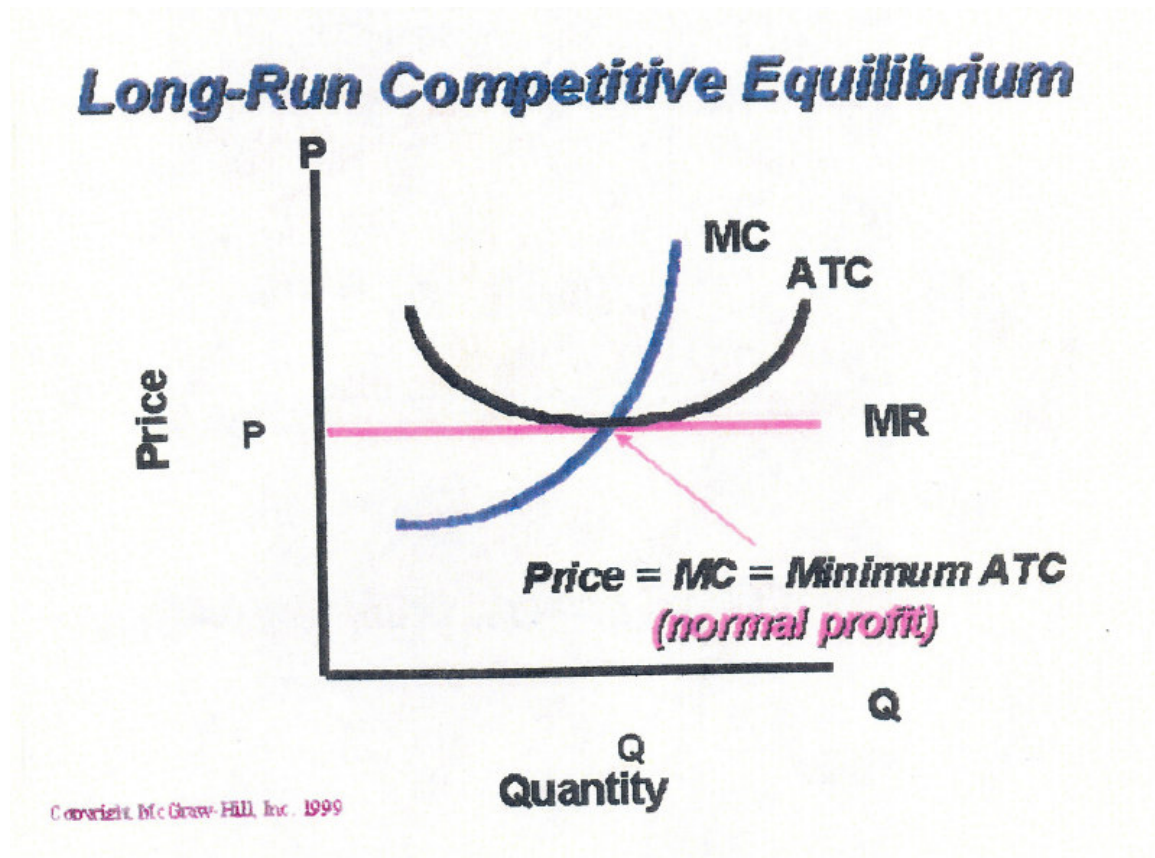
Short run perfect competition



Long run in perfect competition

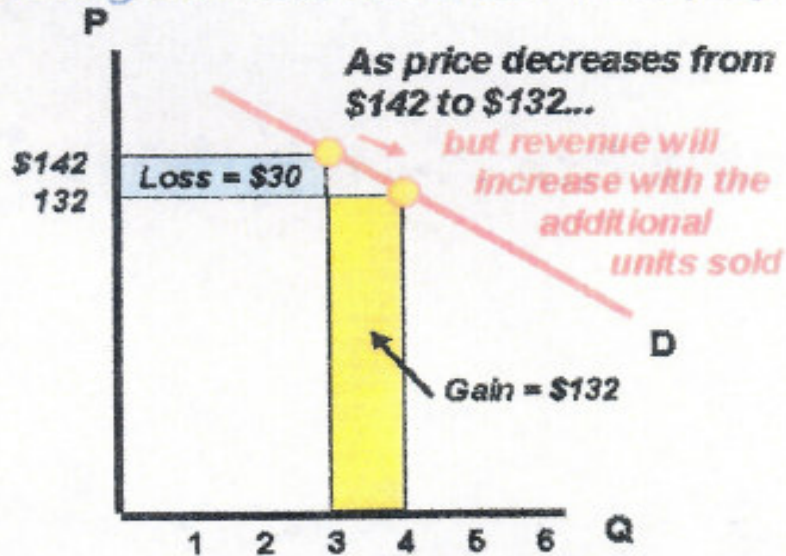
Test for allocative efficiency $P = MC$

Test for productive efficiency $P = ATC$

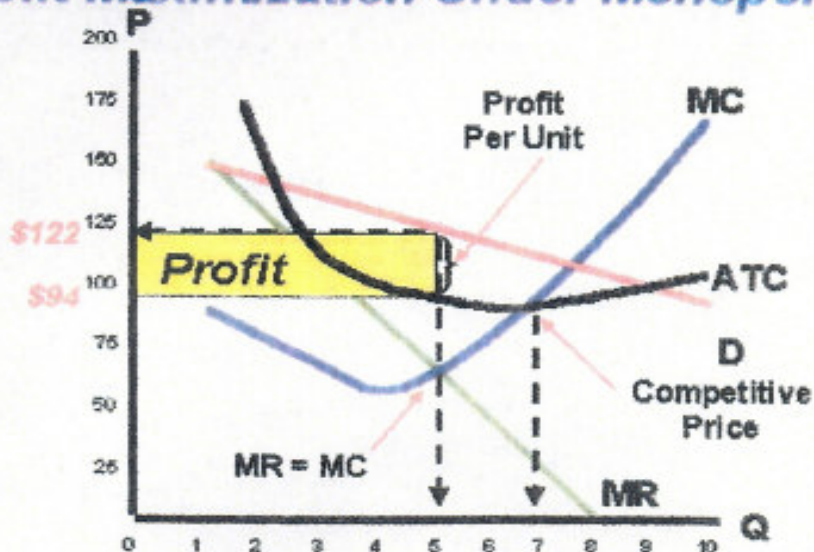


Monopoly

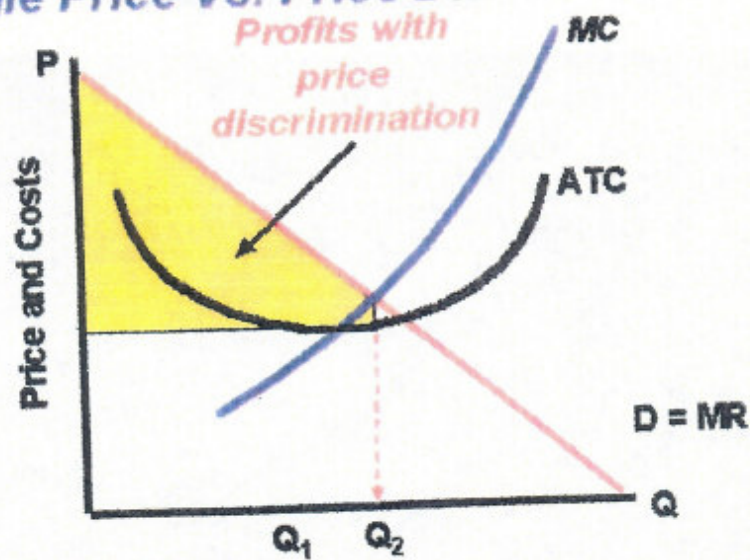
Price & Marginal Revenue Under Monopoly



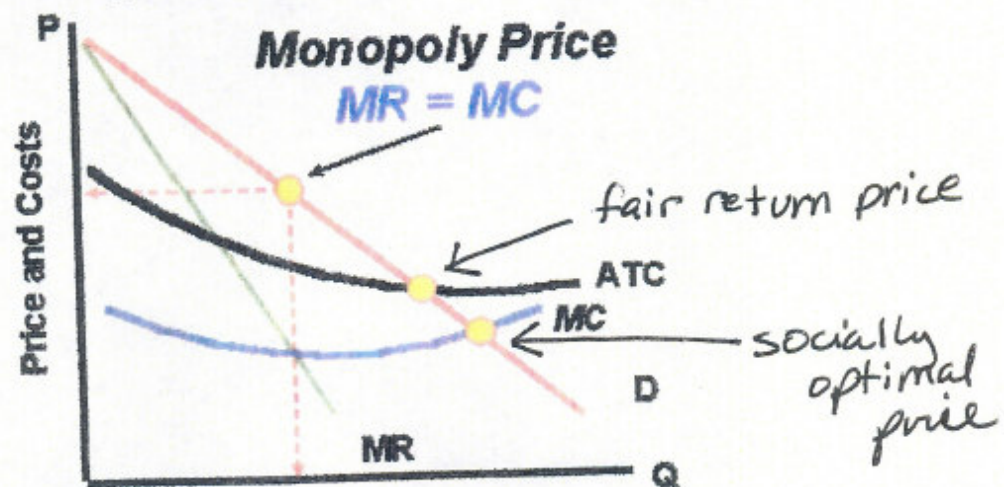
Profit Maximization Under Monopoly



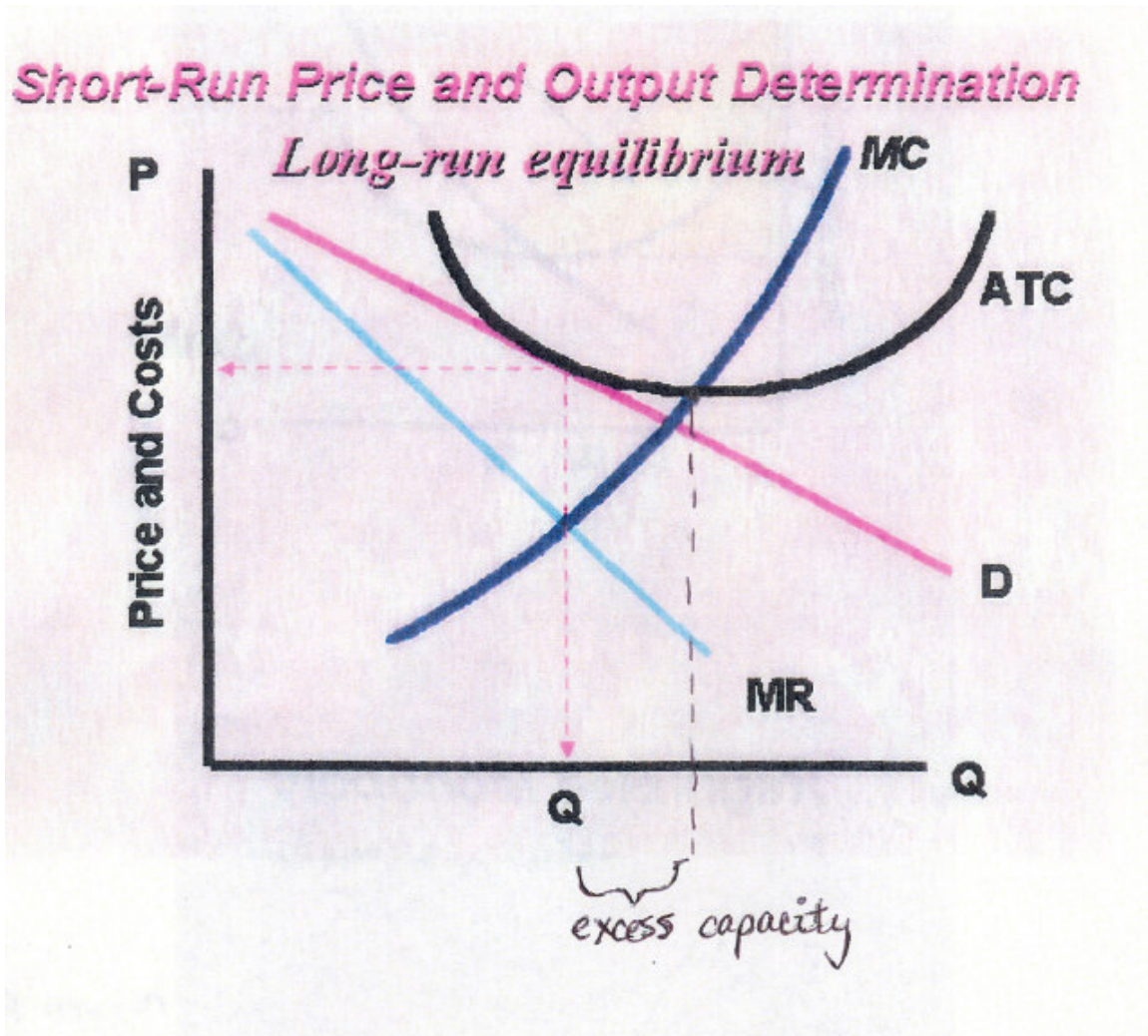
Single Price Vs. Price Discrimination



Regulated Monopoly



Monopolistic Competition



Oligopoly - Game Theory

Pay off matrix - Duopoly

		Marlboro's Decision	
		Advertise	Don't Advertise
Camel's Decision	Advertise	Marlboro gets \$3 billion profit Camel gets \$3 billion profit	Marlboro gets \$2 billion profit Camel gets \$5 billion profit
	Don't Advertise	Marlboro gets \$5 billion profit Camel gets \$2 billion profit	Marlboro gets \$4 billion profit Camel gets \$4 billion profit

An Advertising Game

In this game between firms selling similar products, the profit that each earns depends on both its own advertising decision and the advertising decision of the other firm.

Dominant Strategy – strategy that is best for a player regardless of the strategy chosen by the other players

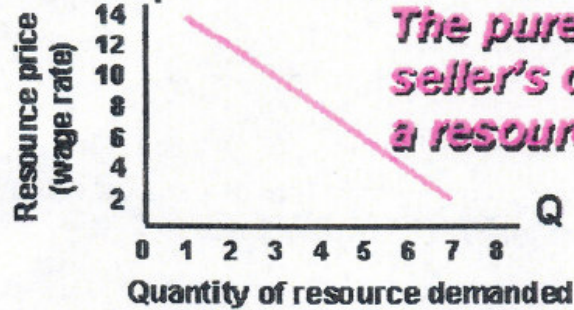
Nash Equilibrium – a situation in which economic actors interacting with one another choose their best strategy given the strategies that all the other actors have chosen

Marginal Revenue Production Analysis

Pure Competition

MRP is a Demand Schedule

Units of resource	Total product	Marginal product MP	Product price	Total revenue	Marginal revenue product MRP
0	0			\$ 0	
1	7	7	\$2	14	\$ 14
2	13	6	2	26	12
3	18	5	2	36	10
4	22	4	2	44	8
5	25	3	2	50	6
6	27	2	2	54	4
7	28	1	2	56	2



The purely competitive seller's demand for a resource

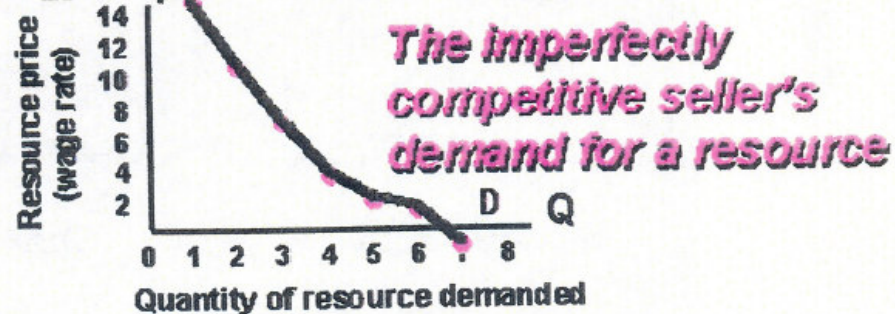
MRP when the *output* market is perfectly competitive

Marginal Revenue Product Analysis

Imperfect Competition

MRP is a Demand Schedule

Units of resource	Total product	Marginal product MP	Product price	Total revenue	Marginal revenue product MRP
0	0	7	\$2.80	\$ 0	\$ 18.20
1	7	6	2.60	18.20	13.00
2	13	5	2.40	31.20	8.40
3	18	4	2.20	39.60	4.40
4	22	3	2.00	44.00	2.25
5	25	2	1.85	46.25	1.00
6	27	1	1.75	47.25	-1.05
7	28	0	1.65	46.20	

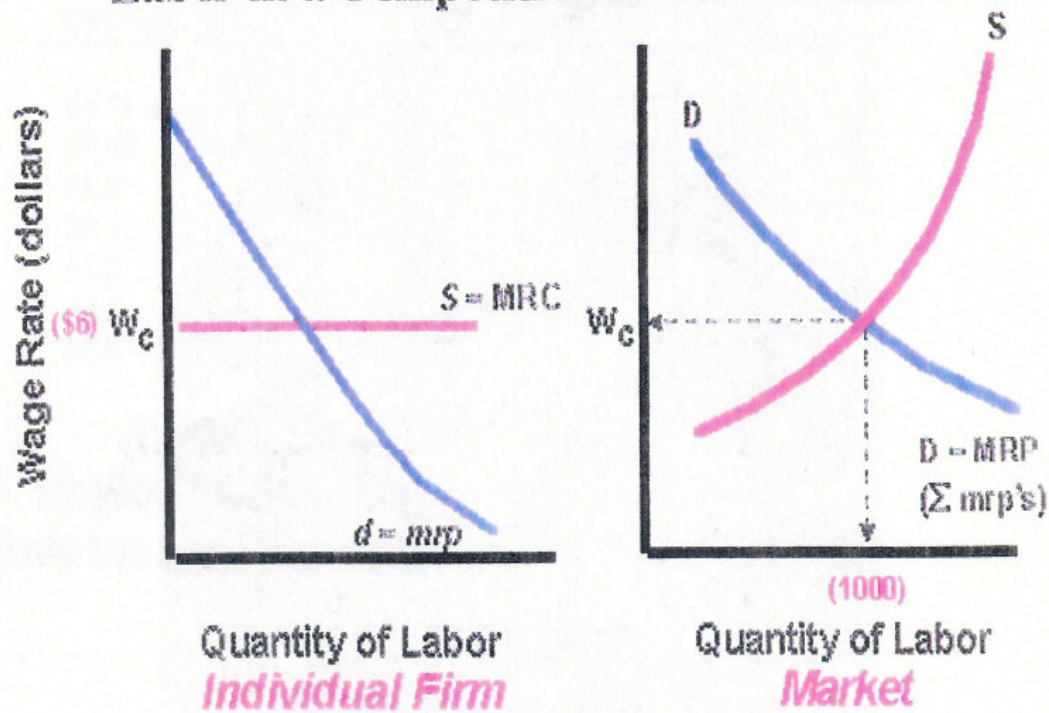


MRP when the *output* market is imperfectly competitive

Perfect Competition in the Resource Market

Supply & Demand:

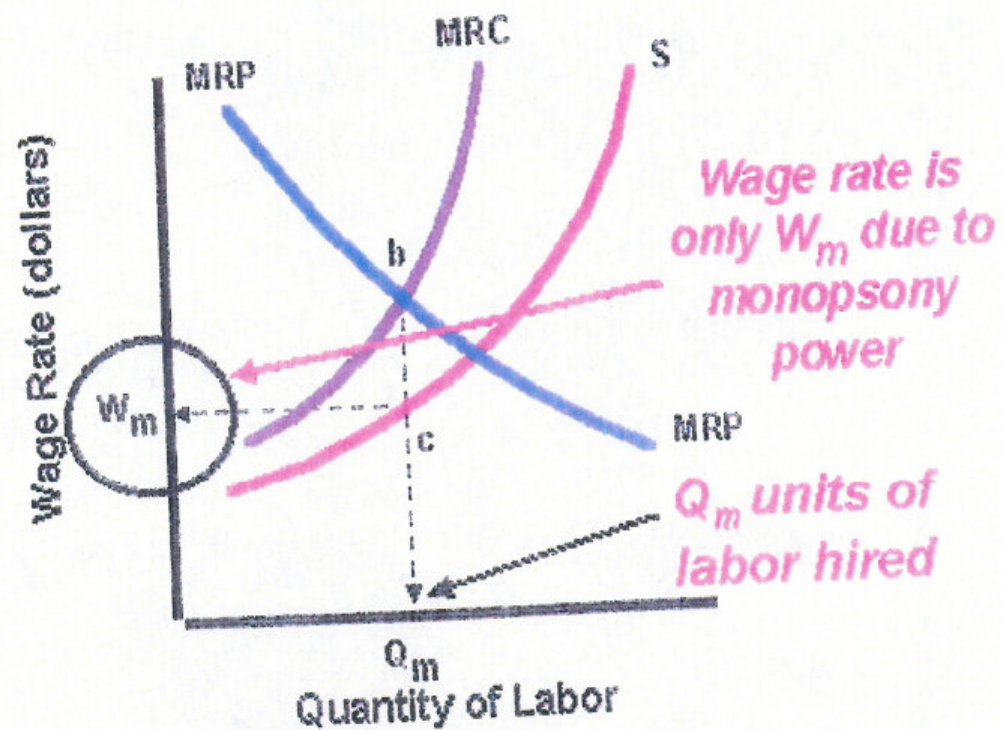
Labor in a Competitive Firm and Market



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Monopsony

Monopsonistic Labor Market



Profit Maximizing Use of Resources by Firms

Optimum Combination of Resources

Least-Cost Rule

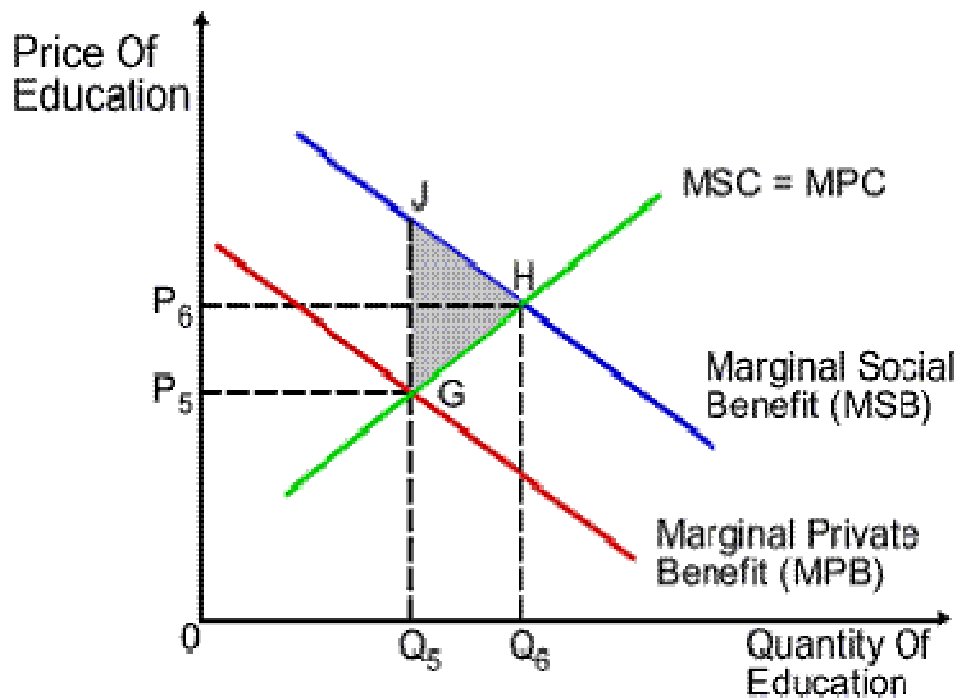
$$\frac{\text{MP of Labor}}{\text{Price of Labor}} = \frac{\text{MP of Capital}}{\text{Price of Capital}}$$

Profit-Maximizing Combination

$$\frac{\text{MRP}_L}{P_L} = \frac{\text{MRP}_C}{P_C} = 1$$

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Positive Externality



Negative Externality

