

- resource pricing - Money – Income Determination, Cost Minimization, Resource allocation, Policy issues Helps determine money income while simultaneously rationing scarce resources to various industries and firms
- Derived Demand - The demand for a resource that depends on the demand for the products it helps to produce. Ex: the demand for haircuts causes the demand for barbers
- direct demand - The Demand directly for a product or service. Ex: Housing, healthcare, phones, food, clothes
- (MRP) - The marginal revenue product represents the change in total revenue resulting from the use of each additional unit of a resource. $MRP = \text{Change in total revenue} / \text{Unit change in resource quantity}$
- (MRC) - Marginal resource cost is equal to the amount that each additional unit of a resource adds to a firm's total cost. $MRC = \text{Change in total cost} / \text{Unit change in resource quantity}$
- Marginal Product - The additional output produced when 1 additional unit of a resource is employed (the quantity of all other resources employed remaining constant); equal to the change in *total product* divided by the change in the quantity of a resource employed.
- What does the labor demand curve look like for a competitive seller? - For competitive seller it is downward sloping; Higher wages reduce quantity demanded
- Shifters for demand of labor- a change in price does not shift demand for labor, The demand for the product produced by that labor changes, productivity of labor changes, The price of a substitute input decreases, provided the output effect exceed the substitution effect, The price of a substitute decreases, provided the substitution effect exceeds the output effect, The price of a complementary good changes
- profit-maximizing quantity of a resource – Where $MRP = MRC$ or $MRP > MRC$
- What have real wages in the United States done in the long run? They have increased, Better pay = more purchasing power
- nominal and real wages - A nominal wage is the amount of money received per hour, day, or year. A real wage is the quantity of goods and services a worker can obtain with nominal wages or the “purchasing power” of nominal wages. Ex: in nominal wages increase by 5% and inflation rises by 3% then real wage increases by 2%
- reasons attributed to increases in labor productivity - This is due to the plentiful capital available in these nations, access to abundant natural resources, advanced technology, the quality of the labor, education
- real wages and productivity relate - Increased productivity raises real wages
- why the market supply curve for labor is upsloping. - Employers as a group must pay higher wage rates to obtain more workers. They do so to bid workers away from other industries and occupations
- What would the resource supply curve look like in a purely competitive resource market? Horizontal line cost=supply
- what causes shifts in the demand for a resource and/or the supply of a resource. - Resource demand curve will shift due to changes in product demand, productivity of resource, and changes in the prices of other inputs (substitutes and complements
- Unions can increase the demand for their labor by increasing the demand for the goods and services they help produce by political lobbying and altering price of other inputs.
- Exclusive unions restrict permanent immigration, reduce child labor, enforce shorter work week and occupational licensing
- Inclusive unions try to provide membership to everyone in unskilled fields rather than hiring nonunion member. More pressure on firms to comply with demands.
- Industrial unions: organize all available workers in given firm not just main people, gives union more power as all workers are unionized (janitors)
- concentration ratio - % of total industry sales by top 4 firms Oligopoly is greater than 40% and if less than it is a monopolistic competition
- minimum wage argument. Supporters: low-pay labor markets are monopsony markets, a minimum wage can increase wage rates without causing significant unemployment, A higher minimum wage discourages monopsonist to restrict employment Against: a minimum wage will cause employers to hire less workers and high labor costs may force some firms out of business, Workers who are unemployed are clearly worse off than those working for less than minimum wage, Minimum wage is poorly targeted→ teenagers rather than actual ppl struggling
- Price floor – Set above equilibrium, no one can go below the floor, creates surplus
- Price ceiling – Set below equilibrium, don't go above, creates shortage
- Monopolist is a sole employer which gives them lots of power when hiring, ex: only hospital in a 100mile radius. They tend to hire less as it is more beneficial and increasing wages.

MP of second barber = 18, if nominal wages rose 7% and price increased 6% real wages= increased by 1%, 25\$ wage rate = 4 workers for profit max

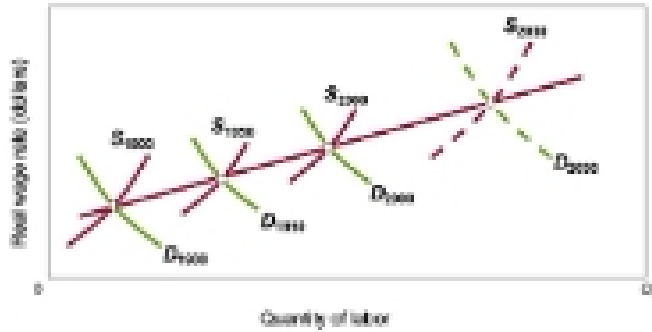
Real wages rise if nominal increases more rapidly than general price, Marginal wage cost of 9th worker = 16, wage rate 17= 4 workers

The table is selling its product in a purely competitive market, Marginal revenue of 6th worker= 17, least cost of 238 =4 of a 6 of b

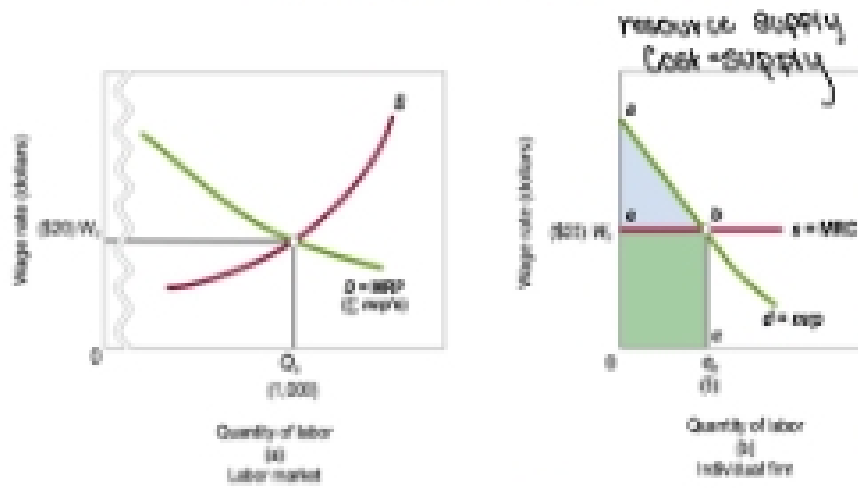
Total fixed cost = BCFG ATC -AVC = fixed cost

Characteristic	Market Model			
	Pure Competition	Monopolistic Competition	Oligopoly	Pure Monopoly
Number of firms	A very large number	Many	Few	One
Type of product	Standardized	Differentiated	Standardized or differentiated	Unique; no close substitutes
Control over price	None	Some, but within rather narrow limits	Limited by mutual interdependence; considerable with collusion	Considerable
Conditions of entry	Very easy; no obstacles	Relatively easy	Significant obstacles	Blocked
Nonprice competition	None	Considerable emphasis on advertising, brand names, trademarks	Typically a great deal, particularly with product differentiation	Mostly public relations advertising
Examples	Financial markets, agricultural products, raw materials	Restaurants, gas stations, retail trade, dresses, shoes	Airlines, automobiles, wireless service providers, space travel, waste disposal	Local utilities, patented pharmaceuticals

The Long-Run Trend of Real Wages in the United States



Labor Supply and Labor Demand in (a) a Purely Competitive Labor Market and (b) a Single Competitive Firm



Determinants of Labor Demand: Factors That Shift the Labor Demand Curve

Determinant	Examples
Change in product demand	Gambling increases in popularity, increasing the demand for workers at casinos. Consumers decrease their demand for leather coats, decreasing the demand for tanners. The federal government increases spending on homeland security, increasing the demand for security personnel.
Change in productivity	An increase in the skill levels of physicians increases the demand for their services. Computer-aided graphic design increases the productivity of, and the demand for, graphic artists.
Change in the price of another resource	An increase in the price of electricity increases the cost of producing aluminum and reduces the demand for aluminum workers. The price of security equipment used by businesses to protect against illegal entry falls, decreasing the demand for night guards. The price of cell-phone equipment decreases, reducing the cost of cell-phone service; this in turn increases the demand for cell-phone assemblers. Health-insurance premiums rise, and firms substitute part-time workers who are not covered by insurance for full-time workers who are.

(ii) Increase in the Price of Capital

Relationship of inputs	(a) Substitution Effect	(b) Output Effect	(c) Combined Effect
Substitutes in production	Labor substituted for capital	Production costs up, output down, and less of both capital and labor used	D_L increases if the substitution effect exceeds the output effect; D_L decreases if the output effect exceeds the substitution effect
Complements in production	No substitution of labor for capital	Production costs up, output down, and less of both capital and labor used	D_L decreases (because only the output effect applies)

Value of Coefficient	Description	Type of Good
Cross elasticity: Positive ($E_{xy} > 0$)	Quantity demanded of Y changes in same direction as change in price of X	Substitutes
Negative ($E_{xy} < 0$)	Quantity demanded of X changes in opposite direction from change in price of Y	Complements
Income elasticity: Positive ($E_y > 0$)	Quantity demanded of the product changes in same direction as change in income	Normal or superior
Negative ($E_y < 0$)	Quantity demanded of the product changes in opposite direction from change in income	Inferior

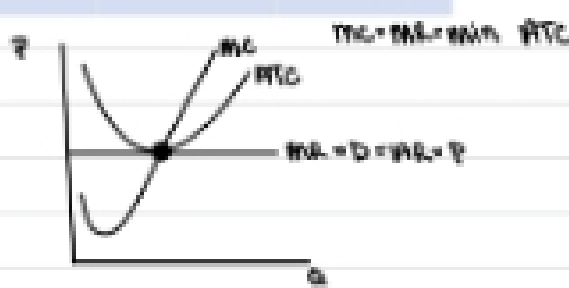
Unit Elastic

Absolute value of Elasticity Coefficient	Demand is:	Description	Impact on Total Revenue of a:	
			Price Increase	Price Decrease
Greater than 1 ($E_p > 1$)	Elastic or relatively elastic	Quantity demanded changes by a larger percentage than does price	Total revenue decreases	Total revenue increases
Equals 1 ($E_p = 1$)	Unit or unitary elastic	Quantity demanded changes by the same percentage as does price	Total revenue is unchanged	Total revenue is unchanged
Less than 1 ($E_p < 1$)	Inelastic or relatively inelastic	Quantity demanded changes by a smaller percentage than does price	Total revenue increases	Total revenue decreases

Perfect inelastic Perfect Elastic

Market Models

Pure competition
Short-Run
profits > Firms entered
losses Firms left



Product Price = $\frac{TR}{Q}$
 $MRC = \frac{\Delta TC}{\Delta QL}$
 $MRP = \frac{\Delta TR}{\Delta QL}$
 $TC = \text{wage rate} \times Q_{\text{employed}}$
 $TR = \text{total Product} \times \text{Product Price}$
 $MP = \frac{\Delta \text{in total Product}}{\Delta \text{units of labor}}$
 Profit max: $\frac{MRP_L}{P_L} = \frac{MRP_C}{P_C}$

Imperfect competition

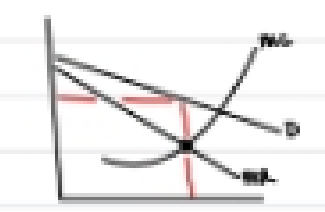
Not productively efficient
Not allocatively efficient

Labor formula: $\frac{MRP_L}{P_L} = \frac{MRP_C}{P_C}$ where $MRC = \text{Price of L and C}$

Monopoly



Monopolistic competition



Oligopoly



Employer $TC = \text{Rent} + \text{Wages} + \text{Normal profit} - \text{Total revenue}$
 TR of profit max firm add up MRP_L and MRP_C and add all together

Short-run Loss Minimization for a Purely Competitive Firm

