

## AP Micro: Key Concepts to Know for the AP Exam

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**\*\*Always read each FRQ entirely before answering it. Circle the word **explain** every time you see it. Circle the words **show you work**, too.\*\***

- Comparative advantage: A country (or individual) will produce the good with the lowest opportunity cost
  - Output: **O**ther **G**oes **O**ver
  - Input: **O**ther **G**oes **U**nder
  - Terms of trade are between the opportunity costs of the goods (set-up your chart)
- Demand shift factors: Income; market size; tastes and preferences; consumer expectation of price; substitutes; complements
- Supply shift factors: Input costs; labor productivity; technology; government action: taxes and subsidies; producer expectation of price; number of producers
- If there is a double shift (shift in supply and demand) draw two small graphs to determine P and Q; either P or Q will be **indeterminate**
- Price ceiling: must be **below** equilibrium to be effective (creates a shortage)
- Price floor: must be **above** equilibrium to be effective (creates a surplus)
- Elasticity: Responsiveness of change in quantity to a change in price
  - To calculate: Use the percent change formula or the midpoint formula
    - \*Use the one that makes the math easier\*
  - The total revenue test can also be used to calculate elasticity (for demand ONLY):  $P \times Q$ 
    - Elastic:  $P \uparrow$  and  $TR \downarrow$  **OR**  $P \downarrow$  and  $TR \uparrow$
    - Inelastic:  $P \uparrow$  and  $TR \uparrow$  **OR**  $P \downarrow$  and  $TR \downarrow$
  - Income elasticity:  $\% \Delta \text{Demand} / \% \Delta \text{income}$ 
    - Normal good: greater than one (Necessity: greater than 0 and less than 1; Luxury: greater than 1)
    - Inferior good: less than zero (negative number)
  - Cross-price elasticity:  $\% \Delta \text{Demand} / \% \Delta \text{in } P \text{ of related good}$ 
    - Negative: complement; Positive: substitutes
  - \*Positive and negative values matter for income elasticity and cross-price elasticity\*
- Burden of taxation: The more **inelastic** one's demand or supply is, the **greater tax burden** they will bear
  - The distance between new supply and old supply is the amount of the tax
  - Be able to locate new CS, new PS, and the revenue box (which is paid to the government)
  - Taxes create DWL and decrease CS and PS
  - World price and tariffs also impact CS and PS
- Utility: Satisfaction; measured in utils
  - When total utility is at a maximum, marginal utility is **zero**
  - Marginal utility: the satisfaction you get from consuming one additional unit
  - Utility maximizing rule: where  $MU/P$  of good X is equal to the  $MU/P$  of good Y (set-up ratios)
    - For two goods, look at where  $MU/P$  is equal to determine how much to buy of each good; if not equal buy more of the good with the higher  $MU/P$
- Explicit and implicit costs
  - Explicit cost: money paid out (rent, wages, etc.)
  - Implicit cost: opportunity cost of the factors of production used by the firm
- Economic profit and accounting profit
  - Economic profit = (explicit and implicit revenue) – (explicit and implicit cost)

- b. Accounting profit: = explicit revenue – explicit cost
  - c. When asked: even when a firm is making **zero economic profit** they are making a **positive** accounting profit
12. Be able to use data from a cost table to figure out MC, AVC, ATC, etc.
13. Economies of scale: when long-run average total costs decrease as output increases (think LRATC)
- a. ATC falls due to economics of scale; ATC increases due to diseconomies of scale
14. Market structures: Be able to label SO/AE, PE, FR; revenue maximizing point; DWL; total cost box; total revenue box; profit; loss, etc.
- a. Profit maximizing P and Q is where **MC=MR**
    - i. **Always derive P from the demand curve**
  - b. Perfect competition: Price taker; identical products;  $P=D=MR=AR$ 
    - i. In the long run, perfectly competitive markets are productively efficient as well as allocatively efficient (socially optimal)
    - ii. Remember to draw side-by-side graphs if asked
  - c. Both perfect competition and monopolistic competition have **zero economic profit in the long run**
    - i. If a firm is making a profit, more firms will enter and compete away the profit
  - d. Monopoly: one firm; price maker; always produces in elastic region; revenue maximizing point is where MR crosses Q axis (should bisect demand curve in half and into elastic and inelastic regions)
    - i. Does **not** operate at socially optimal; **not** productively efficient
  - e. Monopolistic competition: many small firms; differentiated product; non-price competition (advertising);
    - i. Firms are **not** allocative efficient (socially optimal) or productively efficient
  - f. Oligopoly: standard or differentiated products; mutually interdependent in decision-making
    - i. Nash equilibrium for a game theory problem: neither player can improve their outcome by changing their strategy
15. Lump-sum tax is a one-time tax (or a lump-sum subsidy)
- a. Affects fixed costs: AFC and ATC. Does **not** change P or Q.
16. A per-unit tax is added to every unit produced (or a per-unit subsidy)
- a. Affects variable costs: AVC, ATC, and MC. Does change P and Q.
17. Perfectly competitive labor market: hire where **MRP=MFC**
- a. This is a side-by-side graph: market=standard S and D; firm=downward sloping demand ( $D_L=MRP$ ) and perfectly elastic supply curve ( $S_L=MFC$ ; firms are wage takers)
  - b.  $MPP \times P = MRP$
  - c. Price of good increases=hire more workers because MRP increases
  - d. Diminishing marginal returns set in after hiring a certain amount of workers
18. The least-cost rule (or cost-minimizing condition): where the ratio of marginal product to the price of an input is equal for all inputs
- a. Operates like  $MU/P$  does for utility (hire more of the item that gets more  $MP/\$$ )
19. Positive externality: under produces in the free market
- a. Must add a **per-unit subsidy** to produce at SO and to eliminate DWL
20. Negative externality: overproduces in the free market
- a. Must add a **per-unit tax** to produce at SO and to eliminate DWL
21. Public goods are **nonexclusive** (everyone can use the good and no one can be excluded from its benefits even if they don't pay) and **nonrival** (shared consumption; consumption by one does not reduce the usefulness to others)