# The Ultimate AP® Microeconomics Unit 1 Cheat Sheet



## 1.1 Scarcity

### Core Ideas

**Scarcity**: unlimited wants, limited resources → every society must choose what, how & for whom to produce.

**Microeconomics** = choices by individuals, households & firms in single markets; macro = the whole economy.

**Positive** statement = testable claim ("price rose 5%").
**Normative** = value judgment ("taxes should fall").

### Factors of Production

| Factor | Example | Payment |
|---|---|---|
| Land | Oil, forests | Rent |
| Labor | Workers' time | Wages |
| Capital | Tools, factories | Interest |
| Entrepreneurship | Risk-taking, ideas | Profit |

**Capital** = human-made tools & equipment, NOT money.
**Human capital** = skills, training & education.

### Opportunity Cost

**Opportunity cost** = value of the next-best alternative given up; only the single next-best choice counts.

**Ex**: you skip a $60 shift to study → the opportunity cost of studying includes the $60 you didn't earn.

**Trade-offs** exist at every level: individuals (time), firms (resources) & governments (budgets).

### Thinking Like an Economist

**Incentives**: people respond to costs & benefits; a price ↑ leads buyers to buy less & sellers to offer more.

**Free goods** are rare: even "free" things cost time.

**Choices** at the margin, not all-or-nothing.

⚠ Money is NOT a factor of production; capital means physical tools, machines & buildings used to produce.

✓ MCQ: "should," "ought" or a value word → normative; a testable cause-effect claim → positive.

## 1.2 Economic Systems

### 3 Basic Questions

**Every economy** must answer: what to produce, how to produce it & for whom; systems answer differently.

| System | Who decides | Example |
|---|---|---|
| Market | Prices, buyers | Mostly US |
| Command | Central govt | Former USSR |
| Traditional | Custom, history | Subsistence |
| Mixed | Markets + govt | Most nations |

### Market Economies

**Price system**: prices signal scarcity & guide resources to their most valued uses w/o central planning.

**Property rights**: secure ownership gives people the incentive to invest, trade & use resources wisely.

**Self-interest + competition** → firms produce what buyers want at the lowest cost (the "invisible hand").

**Rationing**: in markets, price rations scarce goods; in command systems, queues, quotas or rules do.

### Circular Flow

**Product market**: households buy goods & services from firms. **Factor market**: firms buy land, labor, capital.

**Flows**: money (spending, income) flows 1 way; goods, services & resources flow the opposite way.

### Command Economies

**Central planners** set output & prices; problems: weak incentives, shortages & poor info about wants.

**Govt roles** in mixed systems: enforce contracts, provide public goods & correct market failures (Unit 6).

**Ex**: rent controls & price caps add command features.

⚠ In the circular flow, households SELL factors (labor) & BUY products; firms do the exact reverse.

✓ Real economies are mixed; MCQs ask which feature (prices, planning, custom) fits a given system.

## 1.3 The PPC

### Production Possibilities Curve

**PPC**: all max combos of 2 goods an economy can make w/ all resources fully used & technology fixed.

**Assumptions**: 2 goods, fixed resources, fixed technology & a set time period; change any → the PPC shifts.

| Point | Meaning |
|---|---|
| On the PPC | Efficient (full use) |
| Inside | Inefficient / unemployed |
| Outside | Unattainable now |

**Productive efficiency**: any point ON the PPC. **Allocative efficiency**: the point society values most.

### Opportunity Cost on a PPC

**Moving along** the PPC: gaining more of 1 good means giving up some of the other = opportunity cost.

**Ex**: (10 pizza, 20 robots) → (14 pizza, 12 robots): 4 pizza cost 8 robots → OC of 1 pizza = 2 robots each.

**Slope** = OC of the x-axis good in units of the y-axis good; a steeper slope = a higher OC of the x good.

### Shape

**Bowed out (concave)**: increasing OC b/c resources are specialized & not equally good at both goods.

**Straight line**: constant OC b/c resources are equally suited (perfectly adaptable) to both of the goods.

**Constant OC ex**: (0, 30) → (10, 20) → (20, 10): every 10 X costs 10 Y → OC of 1 X = 1 Y → straight line.

**Law of increasing OC**: each extra unit of X costs MORE Y as less-suited resources shift over to make X.

⚠ OC = what you GIVE UP ÷ what you GAIN; check that your answer is in units of the good given up.

✓ FRQ: label both axes w/ the 2 goods & draw a bowed-out PPC unless the prompt says OC is constant.

## 1.3 PPC Shifts & Growth

### What Shifts the PPC

| Change | Effect |
|---|---|
| More resources | Shifts out |
| Better technology | Shifts out |
| More human capital | Shifts out |
| Disaster, war loss | Shifts in |
| Unemployment | Point inside, no shift |

**Tech in 1 good** only → the PPC pivots out along that good's axis; the other intercept stays where it is.

**Ex**: a new robot-making method → robot intercept ↑, pizza intercept unchanged; PPC rotates outward.

### Capital vs. Consumer Goods

**Trade-off today vs. tomorrow**: making more capital goods now → bigger outward PPC shift in the future.

**Ex**: Country A picks more capital goods than B → A's PPC grows faster, though A consumes less today.

### Moves vs. Shifts

**Movement along**: choosing a different combo w/ the same resources. **Shift**: resources or tech change.

**Unemployment or recession** = a point inside the PPC; ending it moves the point out, no shift needed.

### Economic Growth

**Growth** = an outward shift of the PPC; it lets an economy produce more of BOTH goods than before.
**Trade** lets a nation CONSUME outside its PPC, but its production stays on or inside the PPC (Unit 1.4).

**Immigration** or more workers → shifts out.

⚠ Unemployed resources do NOT shift the PPC in; they put the economy at a point inside the curve.

✓ Graph shifts carefully: shift only the axis of the good whose production ability actually changed.

## 1.4 Comparative Advantage

### Absolute vs. Comparative

**Absolute advantage**: can make MORE of a good w/ the same resources (or the same amount w/ fewer).

**Comparative advantage**: can make a good at a LOWER opportunity cost; this decides who should specialize.

### Output Method (Units Produced)

| Producer | Wheat | Cloth |
|---|---|---|
| Ana | 10 | 20 |
| Ben | 6 | 6 |

**OC (output)**: other ÷ own. Ana: 1 wheat = 2 cloth; 1 cloth = 0.5 wheat. Ben: 1 wheat = 1 cloth; 1 cloth = 1 wheat.

**Result**: Ben has comparative advantage in wheat (OC 1 < 2); Ana in cloth (OC 0.5 < 1). Ana has absolute in both.

### Input Method (Time or Resources)

**Input data** (hours per unit): OC = own ÷ other; flip the output rule b/c fewer hours = more productive.

**Ex**: Ana needs 2 hrs/wheat & 1 hr/cloth → OC of 1 wheat = 2 cloth; same answer as the output method.

**Ex input**: Ben needs 3 hrs/wheat & 3 hrs/cloth → OC of 1 wheat = 1 cloth; Ana's is 2 → Ben has wheat advantage.

### Specialize & Trade

**Each specializes** in its lower-OC good & trades; total output rises & both consume beyond their PPC.

**Lower OC wins**: comparative advantage depends on what you give up, not on how much you can make.

**Ex specialize**: Ana makes cloth & Ben makes wheat, so each good is made by its lowest-OC producer.

⚠ Input vs. output: output tables → "other over own"; input tables → "own over other." Check the units 1st.

✓ One producer can have absolute advantage in both goods but never comparative advantage in both.

## 1.4 Terms of Trade

### Mutually Beneficial Trade

**Terms of trade** = the price of 1 good in terms of the other that 2 trading partners agree on before they trade.

**Rule**: terms must fall BETWEEN the 2 producers' opportunity costs for both sides to gain from trade.

**Ex**: Ben's OC of 1 wheat = 1 cloth; Ana's = 2 cloth → any price between 1 & 2 cloth per wheat works.

### Check a Proposed Deal

| Terms (cloth per wheat) | Ana (buys wheat) | Ben (sells wheat) |
|---|---|---|
| 0.8 | Gains | Loses |
| 1.5 | Gains | Gains |
| 2.5 | Loses | Gains |

**Ana** gains if she pays < 2 cloth per wheat (her own OC); **Ben** gains if he gets > 1 cloth per wheat in return.

**Gains split**: terms near 1 cloth favor Ana; terms near 2 cloth favor Ben; the midpoint shares the gains.

### Gains From Trade

**Consume outside the PPC**: after specializing & trading, each can consume a combo it couldn't make alone.

**Ex**: at 1.5 cloth per wheat, Ben trades 4 wheat for 6 cloth; making 6 cloth himself would cost 6 wheat.

**Absolute advantage in both** doesn't stop gains: Ana still benefits by trading for wheat instead of making it.

### Real-World Links

**Trade** between nations follows the same logic; tariffs & quotas reduce these gains (Unit 6 & macro).

⚠ Terms outside the range of OCs mean 1 side would be better off producing both goods itself.

✓ FRQ: state each OC, then show the terms lie between them; name who gains & why in 1 sentence.

## 1.5–1.6 Cost-Benefit & Marginal Analysis

### Costs & Benefits

**Explicit costs** = money paid out. **Implicit costs** = value of forgone opportunities (owner's time).

**Economic profit** = total revenue − explicit − implicit costs; accounting profit ignores implicit costs.

**Ex implicit cost**: a baker who quits a $50K job to run her shop has a $50K implicit cost, even w/ no bill.

**Sunk costs** are already spent & can't be recovered; ignore them when making the next decision.

**Ex sunk cost**: $2M already spent on a failed app is gone; only future costs & benefits decide what to do next.

### Thinking at the Margin

**Marginal benefit (MB)** = extra benefit of 1 more unit; **marginal cost (MC)** = extra cost of 1 more.

**Decision rule**: do 1 more unit if MB ≥ MC; stop at the quantity where MB = MC (the optimal amount).

| Hours studied | MB | MC |
|---|---|---|
| 1 | 20 | 5 |
| 2 | 15 | 8 |
| 3 | 10 | 10 |
| 4 | 6 | 13 |

**Ex**: study 3 hours, where MB = MC = 10; the 4th hour's MC (13) exceeds its MB (6), so stop right at 3 hours.

### Total vs. Marginal

**Net benefit** (total benefit − total cost) is largest where MB = MC, not where total benefit itself is largest.

**Marginal ≠ average**: decisions depend on the NEXT unit.

⚠ Sunk costs don't matter: if you'd now rather stay home, a nonrefundable ticket's price shouldn't make you go.

✓ "Should she produce/consume 1 more?" → compare THAT unit's MB to its MC, never the totals.

## 1.6 Consumer Choice

### Utility

**Utility** = satisfaction from consuming a good. **Marginal utility (MU)** = extra utility from 1 more unit of it.

**Diminishing MU**: each extra unit adds less satisfaction than the one before (the 3rd slice < the 1st).

**Total utility** rises while MU > 0, peaks when MU = 0 & falls when MU < 0 (too much of a good thing).

### Utility-Maximizing Rule

**Rule**: spend the whole budget so $MU_A/P_A = MU_B/P_B$; that's equal utility per dollar on each good bought.

| Unit | MU taco ($2) | MU/P | MU pizza ($4) | MU/P |
|---|---|---|---|---|
| 1 | 20 | 10 | 40 | 10 |
| 2 | 16 | 8 | 32 | 8 |
| 3 | 12 | 6 | 24 | 6 |

**Budget $12**: buy 2 tacos ($4) + 2 pizzas ($8); last MU/P = 8 for both & all $12 is spent → max utility.

### Fix the Imbalance

**If $MU_A/P_A > MU_B/P_B$**: buy more A & less B; MU of A falls & MU of B rises until the 2 ratios are equal again.

**Budget constraint**: $P_A \times Q_A + P_B \times Q_B$ = income; a price ↓ lets you buy more of both goods w/ the same income.

**Price ↓ for A** → $MU_A/P_A$ ↑ → buy more A; this is the logic behind the law of demand (Unit 2 on supply & demand).

### Exam Weight

**Unit 1** = 12–15% of AP Micro: 60 MCQs (70 min, 66%) + 3 FRQs (60 min, 33%); FRQs love PPCs & trade.

⚠ Compare MU PER DOLLAR, not MU alone; a high-MU good can be a worse buy if it costs much more.

✓ Build an MU/P column for each good, then pick the highest MU/P each time until the budget is spent.