UNIT 1

Basic Economic Concepts

Scarcity, economic systems, the production possibilities curve, comparative advantage, and marginal analysis

12–15%	9–11	6
EXAM WEIGHTING	CLASS PERIODS	TOPICS IN UNIT

Teacher presentation · Aligned to the College Board Course and Exam Description

What This Unit Covers

TOPICS IN THIS UNIT

1.1 Scarcity

1.2 Resource Allocation and Economic Systems

1.3 The Production Possibilities Curve

1.4 Comparative Advantage and Trade

1.5 Cost-Benefit Analysis

1.6 Marginal Analysis and Consumer Choice

BIG IDEAS

- MKT — Scarcity and Markets: How do individuals and economies confront scarcity?
- CBA — Costs, Benefits & Marginal Analysis: Why do all decisions have costs?

WHY IT MATTERS

Because most resources are scarce, individuals and societies must make choices. Rational agents make those choices on the margin, weighing additional costs against additional benefits. These foundational ideas drive all consumer and producer analysis later in the course.

12–15% of the AP Exam multiple-choice and free-response score

TOPIC 1.1

Scarcity

Enduring Understanding MKT-1 — Most resources are scarce, and using resources involves constraints and trade-offs.

LEARNING OBJECTIVES: MKT-1.A — Define resources and the cause(s) of their scarcity.

Scarcity and Economic Resources

Economic trade-offs arise because there are not enough resources to meet society's unlimited wants and needs.

1 Scarcity

The condition in which limited resources are insufficient to satisfy unlimited wants. Scarcity forces individuals and societies to make choices and accept trade-offs.

2 The Factors of Production

Economic resources are LAND (natural resources), LABOR (human effort), and CAPITAL (tools and machines). Most factors of production are scarce.

3 Some Resources Are Non-Rival

Not everything is scarce. Some resources — such as established knowledge — are NON-RIVAL: one person's use does not reduce its availability to others.

TOPIC 1.2

Resource Allocation and Economic Systems

Every society must answer the same three economic questions — but different systems answer them differently.

LEARNING OBJECTIVES: MKT-1.B — Define how resource allocation is influenced by the economic system a society adopts.

The Three Basic Economic Questions

Because resources are scarce, every society must decide how to allocate them by answering three questions.

1 WHAT to Produce?

Which goods and services should be produced, and in what quantities, given limited resources?

2 HOW to Produce?

What combination of resources and methods of production should be used to make those goods and services?

3 WHO Consumes?

How is the output distributed — who gets the goods and services that are produced?

Economic Systems

An economic system is the set of institutions and the coordinating mechanism a society uses to allocate scarce resources.

COMMAND ECONOMY

- **Government answers the 3 questions.**
- Central planners decide what, how, and for whom to produce.
- Resources are publicly or collectively owned.
- The coordinating mechanism is central planning.

MARKET ECONOMY

- **Prices and markets answer the 3 questions.**
- Decentralized decisions by households and firms.
- Resources are privately owned.
- The coordinating mechanism is the price system.

MIXED ECONOMY

- **A blend of market and command.**
- Markets allocate most resources, with government intervention.
- Describes virtually every real-world economy.
- Government corrects market failures and provides public goods.

TOPIC 1.3

The Production Possibilities Curve

The first model of the course — it makes scarcity, opportunity cost, and growth visible.

LEARNING OBJECTIVES: MKT-1.C — Define the PPC; explain how it illustrates opportunity cost, efficiency, and growth; calculate opportunity cost.

The Production Possibilities Curve

The PPC shows the maximum combinations of two goods an economy can produce when all resources are fully and efficiently employed.

- Points ON the curve are efficient — all resources are fully and productively employed.
- Points INSIDE the curve are inefficient — resources are unemployed or used poorly.
- Points BEYOND the curve are unattainable with current resources and technology.
- Moving along the curve requires giving something up — that sacrifice is opportunity cost.

KEY TAKEAWAY

The PPC turns scarcity into a picture: with fixed resources, more of one good means less of another.

Opportunity Cost, Trade-offs, and Efficiency

Opportunity Cost

The value of the next-best alternative given up when a choice is made. Every choice has an opportunity cost, even when no money changes hands.

Trade-offs

Producing more of one good on the PPC requires producing less of the other. The downward slope of the PPC IS the trade-off.

Efficiency

An economy is productively efficient when it operates ON the PPC — it cannot make more of one good without sacrificing the other.

Underutilized Resources

A point inside the PPC means idle or misallocated resources. The economy could produce more of BOTH goods by moving to the curve.

The Shape of the PPC

The PPC's shape reveals how opportunity cost behaves as production shifts between goods.

- A straight-line PPC shows CONSTANT opportunity cost — resources are equally suited to both goods.
- A bowed-out (concave) PPC shows INCREASING opportunity cost — the most common and realistic case.
- Increasing cost occurs because resources are specialized: making more of one good means using resources progressively less suited to it.
- This is the law of increasing opportunity cost.

KEY TAKEAWAY

Bowed-out PPC = increasing opportunity cost. Straight-line PPC = constant opportunity cost.

Calculating Opportunity Cost

Scenario — A country can produce a maximum of either 300 phones OR 100 laptops (and combinations in between).

- **On a straight-line PPC, opportunity cost is the trade ratio between the two goods.**
- Giving up all 100 laptops gains all 300 phones.
- Opportunity cost of 1 LAPTOP = 300 phones ÷ 100 laptops = 3 phones.
- Opportunity cost of 1 PHONE = 100 laptops ÷ 300 phones = 0.33 laptops.
- **Rule: opportunity cost of a good = (amount of the other good given up) ÷ (amount of this good gained).**
- From PPC data tables, compute opportunity cost between two rows: loss ÷ gain.

Economic Growth and Shifts of the PPC

The PPC is not fixed — it shifts when an economy's productive capacity changes.

- An OUTWARD shift represents economic growth — the economy can now produce more of both goods.
- Growth is caused by more resources (land, labor, capital) or better productivity and technology.
- An INWARD shift represents contraction — caused by losses of resources or productive capacity.
- Moving from inside the curve to the curve is a recovery, not growth — growth is a shift of the curve itself.

KEY TAKEAWAY

Economic growth shifts the entire PPC outward; it requires more or better resources.

TOPIC 1.4

Comparative Advantage and Trade

Enduring Understanding MKT-2 — The consequences of scarcity can be mitigated through specialization and exchange.

LEARNING OBJECTIVES: MKT-2.A — Define & determine absolute and comparative advantage. MKT-2.B — Gains from trade and terms of trade.

Absolute vs. Comparative Advantage

These two ideas sound similar but answer different questions — keep them distinct.

ABSOLUTE ADVANTAGE

- **Who can produce MORE?**
- A producer has absolute advantage when it can produce more of a good than another producer using the same quantity of resources.
- It is about raw output or productivity.
- A producer can have an absolute advantage in BOTH goods.
- Does NOT determine who should specialize.

COMPARATIVE ADVANTAGE

- **Who gives up LESS?**
- A producer has comparative advantage when it can produce a good at a LOWER opportunity cost than another producer.
- It is about relative cost, not raw output.
- Each producer has a comparative advantage in exactly one of two goods.
- DETERMINES who should specialize and trade.

Determining Comparative Advantage

Scenario — In one day: Country A makes 12 shirts OR 6 tables; Country B makes 8 shirts OR 8 tables.

- **Find each country's opportunity cost (loss ÷ gain):**
  - Country A: 1 shirt costs 0.5 tables (6÷12); 1 table costs 2 shirts (12÷6).
  - Country B: 1 shirt costs 1 table (8÷8); 1 table costs 1 shirt (8÷8).
- **Shirts: A gives up 0.5 tables vs. B's 1 table → Country A has comparative advantage in shirts.**
- **Tables: B gives up 1 shirt vs. A's 2 shirts → Country B has comparative advantage in tables.**
- Conclusion: A specializes in shirts, B specializes in tables, then they trade.

Specialization, Trade, and the Terms of Trade

When each producer specializes by comparative advantage, total output rises and both can consume beyond their own PPC.

- Specialization according to comparative advantage — not absolute advantage — creates exchange opportunities.
- Through trade, a country can reach consumption points OUTSIDE its own production possibilities curve.
- Terms of trade = the rate at which the two goods are exchanged.
- Trade is mutually beneficial only if the terms of trade fall BETWEEN the two producers' opportunity costs.

KEY TAKEAWAY

Comparative advantage + agreeable terms of trade = gains from trade. Trade lets a nation consume beyond its own PPC.

Finding Mutually Beneficial Terms of Trade

Using the prior example: Country A's opportunity cost of 1 table = 2 shirts; Country B's = 1 shirt.

- **A trade benefits both parties only if each does better than producing the good itself.**
- Country B (exporting tables) will trade a table only for MORE than 1 shirt — its own cost.
- Country A (importing tables) will pay only LESS than 2 shirts for a table — its own cost.
- **Mutually beneficial terms of trade: between 1 and 2 shirts per table.**
- Example: agree on 1.5 shirts per table — both countries gain relative to self-production.
- On the exam, you may be asked to state a specific term of trade or confirm whether a proposed one works.

TOPIC 1.5

Cost-Benefit Analysis

Enduring Understanding CBA-1 — Rational economic decisions require the evaluation of costs and benefits.

LEARNING OBJECTIVES: CBA-1.A — Define and calculate opportunity costs. CBA-1.B — Compare total benefits and total costs.

Costs, Benefits, and Rational Decisions

Explicit vs. Implicit Costs

EXPLICIT costs are out-of-pocket payments. IMPLICIT costs are the value of resources used that do not require a payment (such as your own time). Rational agents count BOTH.

Opportunity Cost in Total Cost

Rational agents include opportunity costs — whether implicit or explicit — when calculating the total economic cost of any decision.

Measuring Benefits

Total benefits are measured as UTILITY for consumers and as TOTAL REVENUE for firms. These are the 'benefit' side of every cost-benefit comparison.

Total Benefits, Total Costs, and the Optimal Choice

Maximize Total Net Benefits

Total net benefit = total benefits − total costs. A rational agent chooses the option that MAXIMIZES total net benefit.

Some Decisions Use Marginal Analysis

Many decisions can be broken into increments and evaluated by comparing marginal benefit with marginal cost (Topic 1.6).

Some Decisions Cannot

Other decisions are all-or-nothing and cannot be broken into increments — these must be evaluated by comparing TOTAL benefits with TOTAL costs directly.

TOPIC 1.6

Marginal Analysis and Consumer Choice

Enduring Understanding CBA-2 — Rational agents compare marginal benefits and marginal costs to find the optimal level of an activity.

LEARNING OBJECTIVES: CBA-2.A — Consumer choice theory. CBA-2.B — Marginal analysis and related terms.

The Theory of Consumer Choice

1 Constraints

Consumers face constraints — especially limited income — and must make optimal decisions within them.

2 Maximize Total Utility

In the model of rational consumer choice, consumers choose so as to maximize their total utility (total satisfaction).

3 Diminishing Marginal Utility

Consumers experience diminishing marginal utility — each additional unit of a good consumed adds less extra satisfaction than the unit before it.

Diminishing Marginal Utility

Marginal utility is the extra satisfaction from consuming one more unit — and it falls as consumption rises.

- The FIRST unit of a good delivers the most marginal utility.
- Each additional unit adds less extra satisfaction than the one before — marginal utility declines.
- Total utility still rises as long as marginal utility is positive.
- If marginal utility turns negative, consuming more actually reduces total satisfaction.

KEY TAKEAWAY

Marginal utility falls as you consume more. This is why consumers will only buy more of a good if its price falls — the basis of the law of demand.

The Utility-Maximizing Rule

A consumer maximizes utility by allocating limited income so the last dollar spent on each good yields equal marginal utility.

THE UTILITY-MAXIMIZING RULE

$$MUx / Px = MUy / Py$$

Set the marginal utility per dollar equal across all goods. If one good gives more utility per dollar, shift spending toward it until the ratios are equal.

MARGINAL UTILITY PER DOLLAR

$$\text{MU per dollar} = MU / \text{Price}$$

Divide a good's marginal utility by its price to compare goods on an equal-cost basis. The consumer also must spend all available income.

Utility Maximization in Action

A consumer has $12. Pizza costs $3 (MU of next slice = 18); soda costs $2 (MU of next can = 16).

- **Compare marginal utility per dollar for each good.**
- Pizza: MU per dollar = 18 ÷ $3 = 6 utils per dollar.
- Soda: MU per dollar = 16 ÷ $2 = 8 utils per dollar.
- **Soda gives more utility per dollar (8 > 6), so spend the next dollar on soda.**
- Keep reallocating until MU per dollar is equal across goods AND all $12 is spent.
- At the optimum: MU(pizza)/$3 = MU(soda)/$2, with the budget fully used.

Marginal Analysis and the Optimal Quantity

Compare MB and MC

Marginal analysis means comparing the additional benefit of doing a bit more of an activity with its additional cost. Do more if MB > MC; do less if MB < MC.

Ignore Sunk Costs

The optimal quantity does NOT depend on fixed (sunk) costs or fixed benefits already determined by past choices. Rational decisions look forward, not backward.

The Optimal Quantity

The optimal quantity is achieved where marginal benefit equals marginal cost (MB = MC) — equivalently, where total net benefit is maximized.

Common Pitfalls & Exam Tips

Label graphs fully

Axes and curves must be labeled. Build proper graphing habits in Unit 1 — they are tested all year on the free-response section.

Invert opportunity cost correctly

Opportunity cost of a good = what you give up ÷ what you gain. The good you are costing goes in the denominator.

Comparative, not absolute

Specialization and trade are decided by COMPARATIVE advantage (lowest opportunity cost), never absolute advantage.

Utility per dollar

Consumers maximize utility by equating MU/P across goods — not by buying the good with the highest raw marginal utility.

Ignore sunk costs

Money already spent is irrelevant to the optimal decision. Only forward-looking marginal costs and benefits matter.

Show your work

On quantitative questions, show every calculation step — partial credit depends on visible reasoning.

Unit 1 — Key Takeaways

1. Scarcity forces choice: limited resources cannot satisfy unlimited wants, so every choice involves trade-offs.

2. Every society answers three questions — what, how, and for whom to produce — through its economic system.

3. The PPC models scarcity, opportunity cost, efficiency, and growth; an outward shift represents economic growth.

4. Comparative advantage (lowest opportunity cost) drives specialization and gains from trade — not absolute advantage.

5. Rational agents weigh total (and marginal) benefits against costs, counting implicit costs and ignoring sunk costs.

6. Consumers maximize utility by equating marginal utility per dollar (MU/P) across all goods within their budget.