

AP MICROECONOMICS

Unit 2: Supply and Demand

Topics 2.1 – 2.4

AP Exam Weight: 20–25% | ~13–15 Class Periods

What We Cover in Unit 2

TOPIC 2.1

Demand

How buyers respond to price — and what moves demand

TOPIC 2.2

Supply

How sellers respond to price — and what moves supply

TOPIC 2.3

Price Elasticity of Demand

How sensitive buyers are to price changes

TOPIC 2.4

Price Elasticity of Supply

How sensitive sellers are to price changes

TOPIC 2.1

DEMAND

How buyers respond to price changes in the market

2.1 | What Is Demand?

Definition

Demand is the willingness AND ability of consumers to buy various quantities of a good at various prices during a given time period.

Key rule: you need BOTH willingness and ability. Wanting alone is NOT demand!



Real-World Example

You WANT a \$1,500 iPhone (willingness ✓)

But you only have \$200 (ability ✗)

→ This is NOT demand.

Demand = wanting it AND being able to pay for it.

Two Types of Change:

Change in QUANTITY demanded — caused by a change in PRICE → movement ALONG the existing demand curve

Change in DEMAND — caused by any NON-PRICE factor → SHIFT of the entire demand curve (D1 to D2)

2.1 | The Law of Demand & The Demand Curve

The Law of Demand

When price rises, quantity demanded falls — and vice versa. Price and quantity demanded move in OPPOSITE directions.

1 Income Effect:

Higher price = feel poorer → buy less

2 Substitution Effect:

Higher price → switch to cheaper alternatives

3 Diminishing Marginal Utility:

Each extra unit gives less satisfaction → pay less



 Pizza Example: At \$5/slice you buy 3. At \$10/slice you only buy 1. Price ↑ → Quantity Demanded ↓

2.1 | What Shifts the Demand Curve? (TRIBE)

T

Tastes & Preferences:

Celebrity endorses shoes → demand increases

R

Related Goods Prices:

Pepsi ↑ → more Coke demanded (substitute);
Hot dogs ↑ → fewer buns demanded (complement)

I

Income:

Normal goods: income ↑ → demand ↑
Inferior goods: income ↑ → demand ↓

B

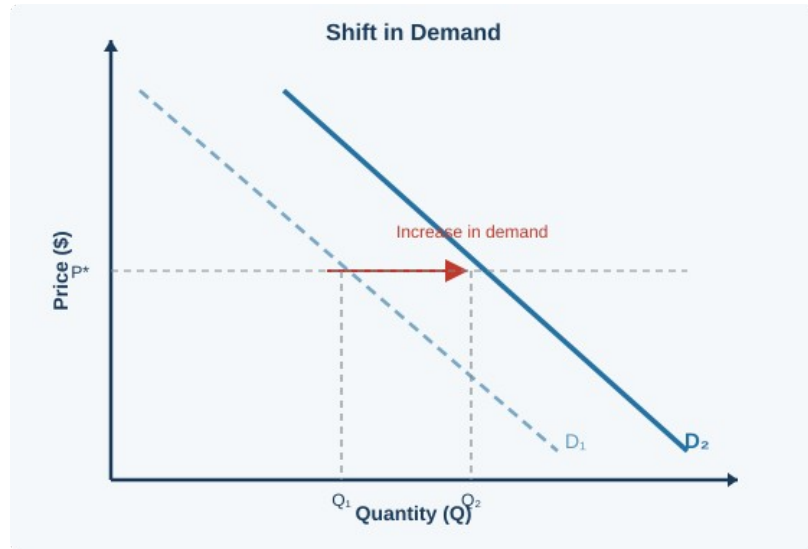
Buyers (# in market):

City population grows → housing demand increases

E

Expectations:

iPhone price expected to rise → buy NOW → demand spikes



★ AP TIP: If a non-price factor increases demand, the curve shifts RIGHT. Decreases → shifts LEFT.

TOPIC 2.2

SUPPLY

How sellers respond to price changes in the market

2.2 | The Law of Supply & The Supply Curve

The Law of Supply

When price rises, quantity supplied rises — and vice versa.
Price and quantity supplied move in the SAME direction.

Why? Profit motive!

When prices are higher, producing and selling becomes more profitable → producers supply more.

Reading the Supply Curve:

- UPWARD-SLOPING (positive slope)
- Vertical axis = Price (P) | Horizontal axis = Quantity (Q)
- Movement ALONG = change in quantity supplied (price changed)
- SHIFT of curve = change in supply (non-price factor changed)



Example: iPhone Production

At \$500/phone: Apple produces 10M units
At \$1,000/phone: Apple produces 25M units

Higher price → more units produced

★ AP TIP — Key Distinction:

A change in PRICE → movement along the curve (change in quantity supplied) | A change in a non-price factor → SHIFT of the entire curve (change in supply)

2.2 | What Shifts the Supply Curve? (TICTEN)

T — Technology

Better machines → more output at lower cost → supply increases (shifts right)

T — Taxes & Subsidies

New tax → costs rise → supply decreases; subsidy → supply increases

I — Input Costs

Steel prices fall → cars cheaper to make → supply increases

E — Expectations

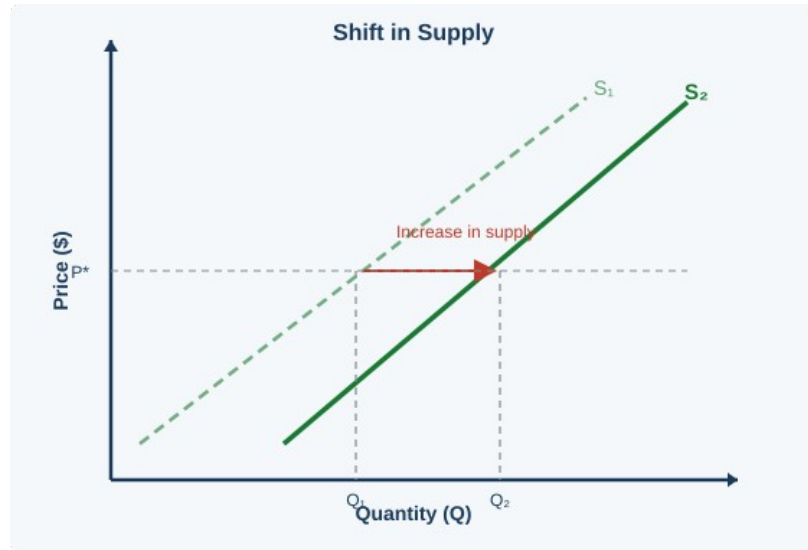
Farmers expect higher corn prices next month → hold back supply now

C — Competition (# Sellers)

More pizza shops open → total market supply increases

N — Nature / Events

Drought destroys crops → supply of wheat decreases



★ AP TIP: Anything that **LOWERS** production costs → supply increases (right shift). Anything that **RAISES** costs → supply decreases (left shift).

TOPIC 2.3

PRICE ELASTICITY OF DEMAND

How sensitive are buyers to price changes?

2.3 | The PED Formula

$$Ed = \left| \% \text{ Change in Quantity Demanded} \right| \div \left| \% \text{ Change in Price} \right|$$

How to Calculate — Step by Step:

Step 1: Find % change in quantity $\rightarrow (\text{New Q} - \text{Old Q}) \div \text{Old Q} \times 100$

Step 2: Find % change in price $\rightarrow (\text{New P} - \text{Old P}) \div \text{Old P} \times 100$

Step 3: Divide $|\% \Delta QD|$ by $|\% \Delta P|$ $\rightarrow$ Use absolute values (always positive)

Step 4: Interpret the result $\rightarrow Ed < 1$ inelastic | $Ed > 1$ elastic | $Ed = 1$ unit elastic



Worked Example: Coffee Café

Price: \$4 $\rightarrow$ \$5 (up 25%) | Quantity: 100 $\rightarrow$ 70 cups (down 30%)

$$Ed = |-30\%| \div |25\%| = 1.2$$

Since $1.2 > 1 \rightarrow$ ELASTIC demand (coffee has substitutes: tea, juice, water)

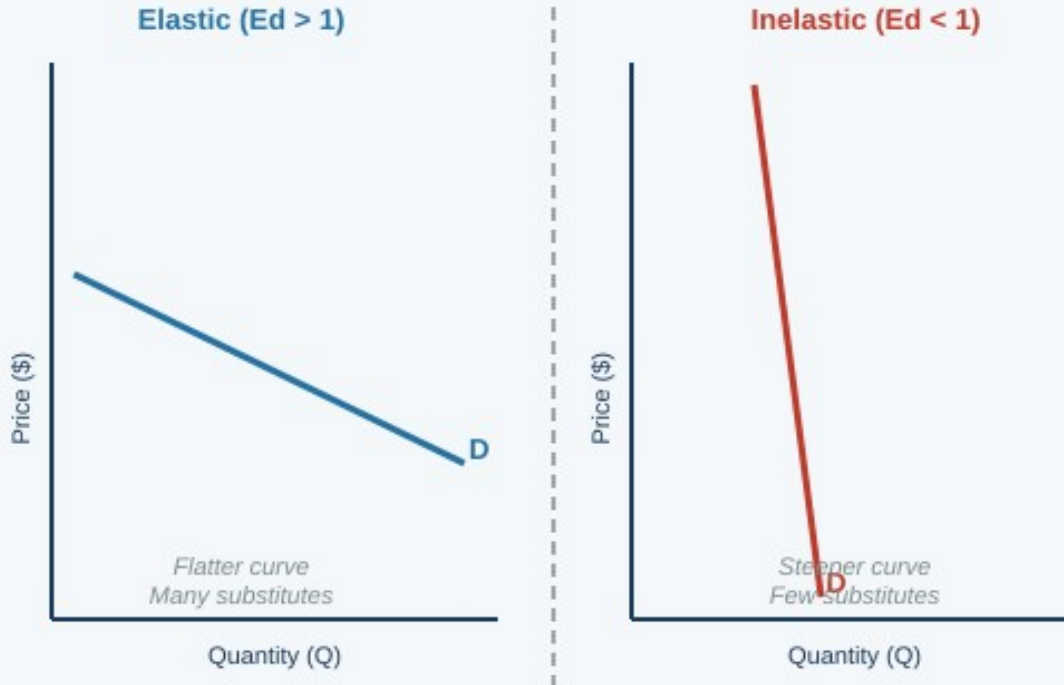
2.3 | Interpreting PED Values

Ed Value	Type	Meaning	Example
Ed = 0	Perfectly Inelastic	Price change → zero change in QD	<i>Insulin, life-saving drugs</i>
Ed < 1	Inelastic	$\% \Delta QD < \% \Delta P$	<i>Gasoline, cigarettes, salt</i>
Ed = 1	Unit Elastic	$\% \Delta QD = \% \Delta P$	<i>Total revenue stays the same</i>
Ed > 1	Elastic	$\% \Delta QD > \% \Delta P$	<i>Designer goods, luxury trips</i>
Ed = ∞	Perfectly Elastic	Tiny price increase → QD falls to 0	<i>Commodity markets, perfect substitutes</i>

★ AP TIP: DETERMINANTS of PED — Number of substitutes (most important), Necessity vs. luxury, Time horizon, Share of income, Brand loyalty

2.3 | What Do the Curves Look Like?

Elastic vs. Inelastic Demand



ELASTIC curve:

Flatter/more horizontal
Small price change → BIG change in QD
Many substitutes available
E.g. soda, designer clothes

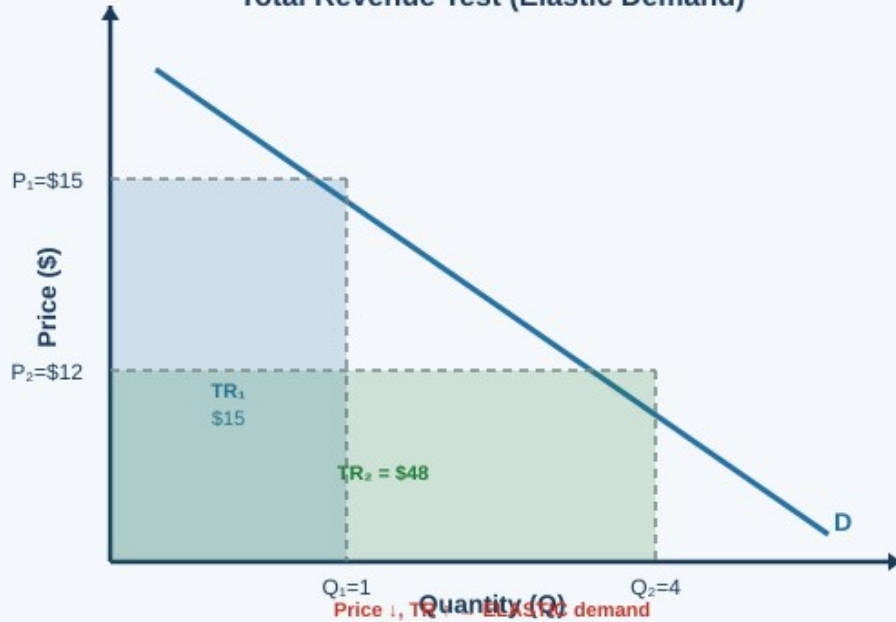
INELASTIC curve:

Steeper/more vertical
Big price change → SMALL change in QD
Few substitutes, necessity
E.g. insulin, gasoline, salt

Memory tip: "Flat = Flexible (elastic)"

2.3 | The Total Revenue Test

Total Revenue Test (Elastic Demand)



Total Revenue = Price × Quantity

Price ↓ → TR ↑

→ ELASTIC demand ($E_d > 1$)

Price ↓ → TR ↓

→ INELASTIC demand ($E_d < 1$)

Price ↓ → TR unchanged

→ Unit elastic ($E_d = 1$)

The Handbag vs. Gasoline Test:

If Gucci raises handbag prices 20%: TR falls (buyers walk away — elastic).

If Exxon raises gas prices 20%: TR rises (buyers still fill the tank — inelastic).

The TR test tells you WHICH market you are in WITHOUT calculating E_d !

TOPIC 2.4

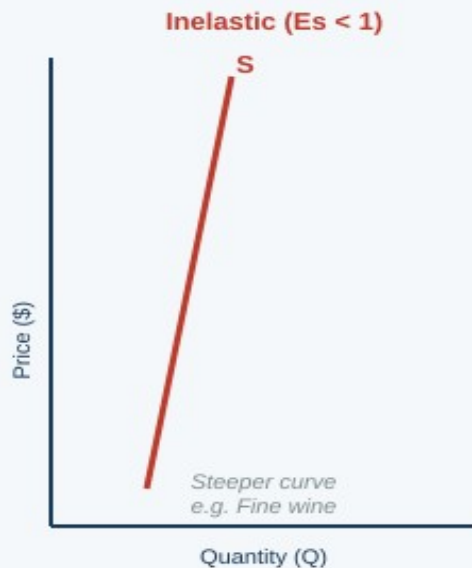
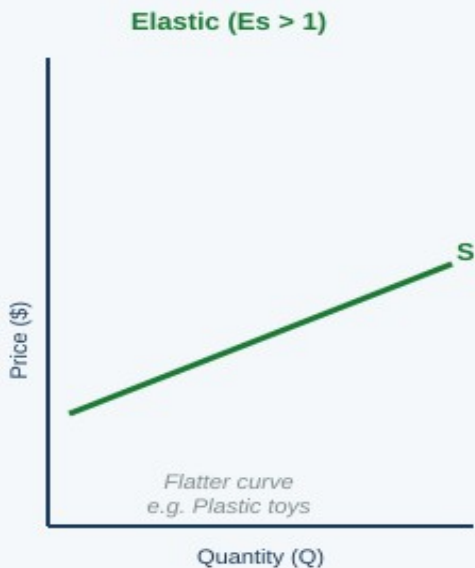
PRICE ELASTICITY OF SUPPLY

How sensitive are sellers to price changes?

2.4 | Price Elasticity of Supply (PES)

$$E_s = \% \text{ Change in Quantity Supplied} \div \% \text{ Change in Price}$$

Elastic vs. Inelastic Supply



Elastic Supply ($E_s > 1$):

Flat curve. Quantity supplied responds a lot to price changes.

E.g. plastic toys, mass-manufactured goods — easy to ramp up production

Inelastic Supply ($E_s < 1$):

Steep curve. Quantity supplied barely changes even if price rises.

E.g. fine wine (aging takes years), original Picasso paintings



T-shirt example: Price \$10→\$15 (+50%), quantity supplied 200→260 units (+30%). $E_s = 30\% \div 50\% = 0.6 \rightarrow$ INELASTIC supply

2.4 | The #1 Determinant of PES: TIME

The longer the time allowed, the MORE elastic supply becomes.

Momentary / Very Short Run

Supply is PERFECTLY INELASTIC (vertical curve). Producers CANNOT change output at all.

Example: Fish at the market today — the boats already sailed yesterday. The catch is fixed no matter what the price does.

Short Run

Supply is INELASTIC (steep curve). Producers can make SMALL adjustments — work overtime, use existing machines harder.

Example: A bakery can bake more loaves this week by staying open later, but cannot build a new oven yet.

Long Run

Supply is ELASTIC (flat curve). Producers can FULLY adjust — new factories, new workers, new firms enter market.

Example: If lumber prices stay high, new sawmills open and supply expands a lot.

★ AP TIP: The AP exam frequently asks you to compare short-run vs. long-run supply elasticity. Short run = steep curve, Long run = flat curve. TIME is always the #1 answer for PES determinants.

Unit 2 Quick Reference Summary

Topic	Key Law / Formula	Curve Shape	Key Shifters
2.1 Demand	$P \uparrow \rightarrow QD \downarrow$ (Inverse)	Downward sloping ↘	TRIBE: Tastes, Related goods, Income, Buyers, Expectations
2.2 Supply	$P \uparrow \rightarrow Qs \uparrow$ (Direct)	Upward sloping ↗	TICTEN: Technology, Input costs, Competition, Taxes, Expectations, Nature
2.3 PED	$Ed = \% \Delta QD \div \% \Delta P $	Flat=elastic; Steep=inelastic; Vertical= $Ed=0$; Horizontal= $Ed=\infty$	Substitutes, Necessity vs luxury, Time, Share of income, Brand loyalty
2.4 PES	$Es = \% \Delta Qs \div \% \Delta P$	Flat=elastic; Steep=inelastic; Vertical short-run; Flat long-run	TIME is #1 factor — short run (inelastic) vs long run (elastic)

Remember: economics is about CHOICES and how people respond to incentives.