



Comparative Advantage



A Pizza & Hot Dog Example | AP Microeconomics

Key Concept

A country has a comparative advantage in a good when it gives up LESS of the other good to produce it — that is, its opportunity cost is lower. Countries should specialize in what they are relatively best at, not necessarily what they are absolutely best at.

Step 1 The Production Table

Each country has 10 workers. Below is how much each country can produce per day if ALL workers focus on one good:

Country 🌐	Pizzas (per day)	Hot Dogs (per day)
USA	40	10
Mexico	20	20

Notice: USA is better at pizza (absolute advantage). Mexico is better at hot dogs. But that alone doesn't tell us who should produce what — we need to look at opportunity costs.

Step 2 Calculate Opportunity Costs

Opportunity cost = what you give up to get one more unit of something.

USA: To make 40 pizzas they give up 10 hot dogs → 1 pizza costs $10 \div 40 = 0.25$ hot dogs | 1 hot dog costs $40 \div 10 = 4$ pizzas

Mexico: To make 20 pizzas they give up 20 hot dogs → 1 pizza costs $20 \div 20 = 1$ hot dog | 1 hot dog costs $20 \div 20 = 1$ pizza

Country 🌐	OC of 1 Pizza	OC of 1 Hot Dog
USA	0.25 hot dogs	4 pizzas
Mexico	1 hot dog	1 pizza

Step 3 Assign Comparative Advantage

Compare opportunity costs DOWN each column — whoever gives up less has the comparative advantage in that good:

Good	Lower OC?	Comparative Advantage
 Pizza	USA ($0.25 < 1$)	☒ USA
 Hot Dogs	Mexico ($1 < 4$)	☒ Mexico

Key insight: Each country has a comparative advantage in exactly one good. This is always true when opportunity costs differ.

Step 4 The Gains from Trade

What happens to world output when each country specializes?

BEFORE Specialization (each country splits workers 50/50)

Country 	 Pizzas	 Hot Dogs
USA (50/50 split)	20	5
Mexico (50/50 split)	10	10
WORLD TOTAL	30	15

AFTER Specialization (each country does what it does best)

Country 	 Pizzas	 Hot Dogs
USA (all pizza)	40	0
Mexico (all hot dogs)	0	20
WORLD TOTAL	40	20



World gain: +10 pizzas and +5 hot dogs — with no new resources, just smarter specialization!

Bonus: Terms of Trade — Why Both Countries Say Yes

The terms of trade is the agreed price of the exchange. It must fall in a specific range or one country walks away.

Step 1 Find the Boundaries

Country	What 1 Pizza Costs at Home
USA	0.25 hot dogs (minimum they'll accept)
Mexico	1 hot dog (maximum they'll pay)

Rule: The trade price of 1 pizza must be **strictly between 0.25 and 1 hot dog**. Outside that range, one country is better off producing at home.

Step 2 Example Deal — 1 pizza = 0.5 hot dogs

USA specializes → makes 40 pizzas, trades 10 pizzas to Mexico.

Mexico specializes → makes 20 hot dogs, trades 5 hot dogs to USA.

Result for each country after the deal:

Country 	 Pizzas	 Hot Dogs
USA	30 (+10 vs. no trade)	5 (same)
Mexico	10 (same)	15 (+5 vs. no trade)

Why 0.5 works for USA: They used to pay 0.25 hot dogs to make a pizza at home. Now they get 0.5 hot dogs per pizza — **twice as good**.

Why 0.5 works for Mexico: They used to pay 1 hot dog to make a pizza at home. Now they pay only 0.5 — **half price**.

Discussion Questions

1. What happens if the terms of trade land exactly at 0.25 or exactly at 1 hot dog per pizza? Is there still a reason to trade?
2. Can a country have an absolute advantage in BOTH goods? Can it have a comparative advantage in both?
3. If Mexico suddenly became twice as productive (can now make 40 pizzas OR 40 hot dogs), would the opportunity costs change? Who would hold comparative advantage then?
4. Think of two people (or two students!) who are good at different things. How does comparative advantage apply to their situation?

Key Vocabulary

Absolute Advantage: Producing MORE of a good using the same resources (lower input per unit).

Comparative Advantage: Having the LOWER OPPORTUNITY COST to produce a good.

Opportunity Cost: The value of the next-best alternative given up when making a choice.

Specialization: Focusing production on the good for which you have a comparative advantage.

Terms of Trade: The agreed exchange rate between two goods; must fall between each country's opportunity costs for both to benefit.
