




Tutorial 2

Jan 22 2021



Topics Covered

1. Trade
2. Supply & Demand

Find the Tutorial notes: jacobhazen1.github.io/ECON1001E/

Question 1

Brazil and Argentina produce steel and corn. The table shows the number of hours per worker needed to produce a kilo of steel or a bushel of corn. They can also produce any linear combination by using workers for the production of each good. Suppose each country has 800 worker hours available for producing these two goods.

Hours per worker needed to produce steel and corn		
Good	Brazil	Argentina
<u>Steel (hs/kilo)</u>	<u>1</u>	4
Corn (hs/bushel)	2	1

Who has the absolute advantage in the production of each good? Explain

Break Down:

- Definition of absolute advantage?
- Answer?

Who has the absolute advantage in the production of each good? Explain

Answer

- Definition of absolute advantage?
 - The absolute advantage goes to whoever can produce more per unit of input or can produce the same output with fewer inputs.
- Answer?

Who has the absolute advantage in the production of each good? Explain

Answer

- Definition of absolute advantage?
 - The absolute advantage goes to whoever can produce more per unit of input or can produce the same output with fewer inputs.
- Answer?
 - Brazil has the absolute advantage in steel production because it needs only 1 hour per kilo of steel, while Argentina needs 4. Argentina has the absolute advantage in the production of corn because it needs 1 hour per bushel while Brazil needs 2.

Who has the comparative advantage in the production of each good? Explain

- Definition?
- Calculation?
- Answer?

Who has the comparative advantage in the production of each good? Explain

- Definition?
 - The comparative advantage goes to whoever has the lower opportunity cost.

- Calculation?

Maximum production	Brazil	Argentina
Steel (kilos)	$\frac{800}{1} = 800$	$\frac{800}{4} = 200$
Corn (bushels)	$\frac{800}{2} = 400$	$\frac{800}{1} = 800$

Opportunity cost:	Brazil	Argentina
Opp. cost of 1 kilo of steel (in bushels of corn)	$\frac{400}{800} = 0.5$	$\frac{800}{200} = 4$
Opp. cost of 1 bushel of corn (in kilos of steel)	$\frac{800}{400} = 2$	$\frac{200}{800} = 0.25$

	B	A
Steel	800	200
Corn	400	800

$$\frac{1}{800} \quad 800 \text{ Steel} = 400 \text{ Corn}$$

$$1 \text{ Steel} = \frac{400}{800} \text{ Corn}$$

$$1 \text{ Steel} = 0.5 \text{ Corn}$$

Left Blank for Calculations notes

Who has the comparative advantage in the production of each good? Explain

Answer:

Brazil has the comparative advantage in the production of steel (0.5 bushels vs Argentina's 4) and Argentina has the comparative advantage in the production of corn (0.25 kilos of steel vs Brazil's 2)

Explain the difference between comparative and absolute advantage

Answer:

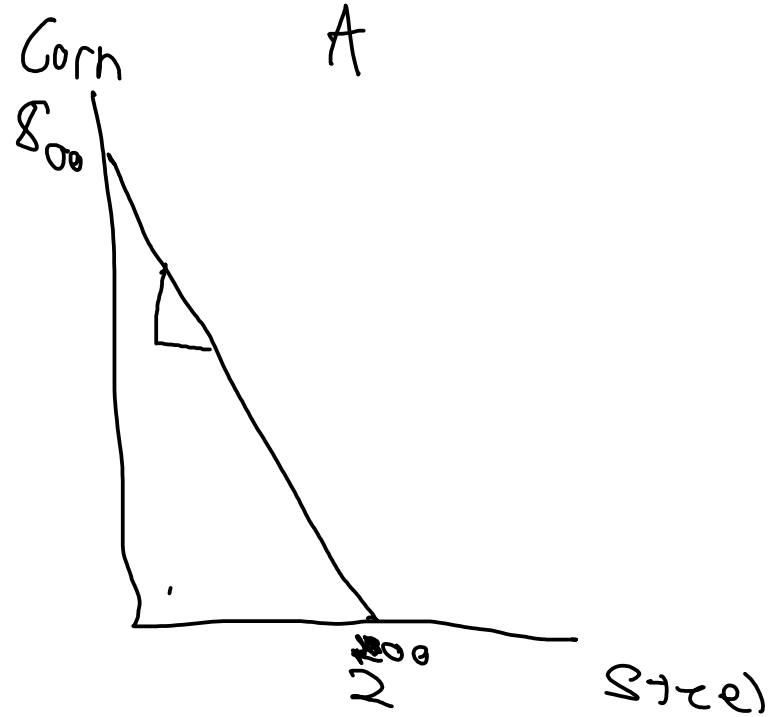
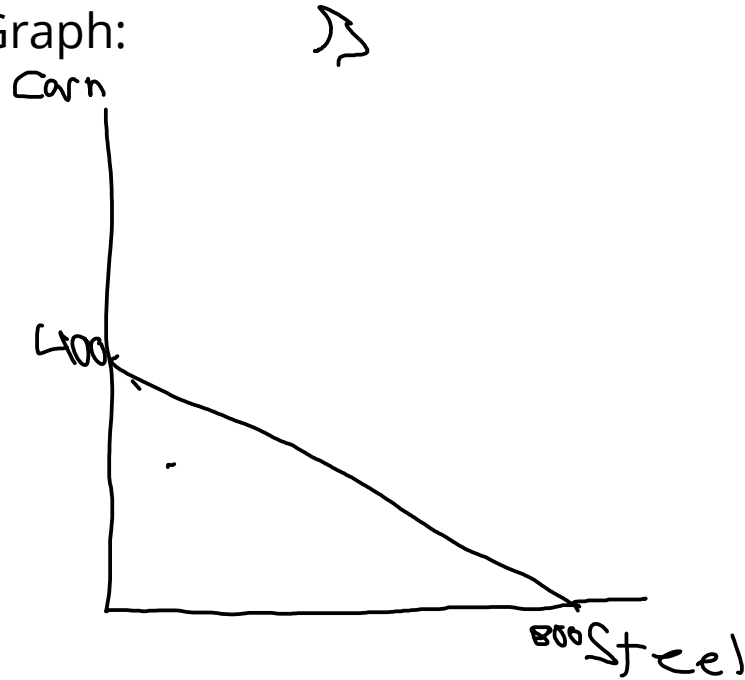
Explain the difference between comparative and absolute advantage

Answer:

- One refers to having the lowest cost of inputs/being more productive (absolute advantage); the other refers to having the lowest opportunity cost, i.e. cost measured in terms of other goods.

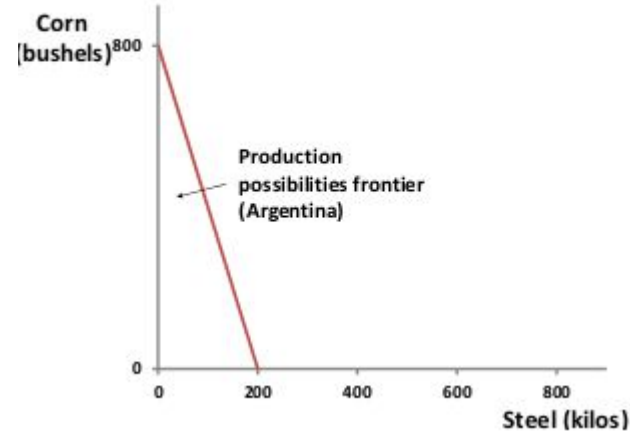
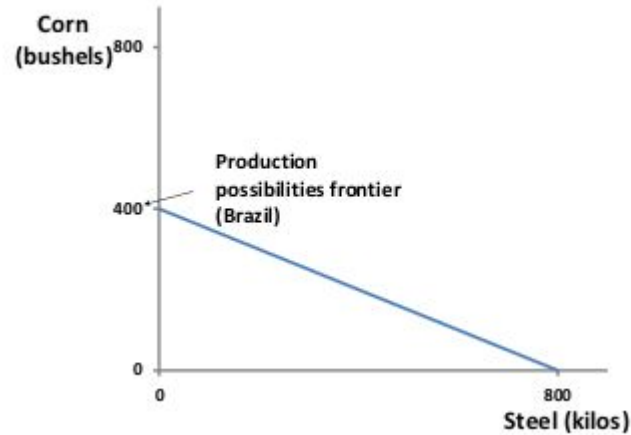
Draw the production possibilities frontier (PPF) for each country

Graph:



Draw the production possibilities frontier (PPF) for each country

Graph:



Explain what you just drew

Questions:

What do the points on the PPF represent?

What does the slope of the PPF represent?

What does it mean for it to be a straight line vs a bowed-out curve?

What do the points on the PPF represent?

- The points on the PPF represent efficient production points
 - i.e. combinations of maximum quantities of corn and steel that can be produced using all the worker hours available.

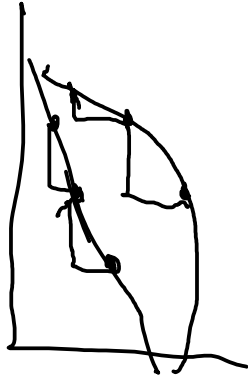
What does the slope represent?

The slope of the PPF measures how many units of corn (good on the y-axis) are given up to produce an additional unit of steel (the good in the x-axis).

It measures the opportunity cost of producing an additional unit of steel (the good in the x-axis).

What does it mean for it to be a straight line vs a bowed-out curve?

A straight line has a constant slope. Because the slope measures the opportunity cost, a straight line means the opportunity cost is constant for all units. A bowed-out PPF has an increasing opportunity cost per unit of steel as you produce more units (slope becomes steeper).



Question f

Suppose that, if they did not trade, Brazil would produce (and consume) 500 kilos of steel. Argentina would use half of its worker hours for steel and half for corn. What would be the production (and consumption) of steel and corn in each country?

B

A

Steel

~~800~~ 500~~200~~ 100

Corn

~~400~~ 250
150~~100~~ 100

OPP cost

1 Steel = 0.5 Corn

 $500 \cdot 0.5 = 250$

For Table

Calculations

- Brazil produces 500 kilos of steel.
 - The opportunity cost of steel is 0.5 bushels of corn,
 - Brazil gives up $500 \times 0.5 = \underline{250}$ bushels of corn and it can produce $400 - 250 = \underline{150}$ bushels of corn.
- Argentina uses half of its resources in each good so it can produce half of the maximum amount of each.

Question G

Brazil proposes that they both specialize and produce only the good for which each country has a comparative advantage. Brazil then proposes that they exchange 300 bushels of corn for 200 kilos of steel. Does Argentina agree to this trade? Your explanation should describe the production bundle, the trade, and the final consumption bundle in each country.

B : +300 Corn -200 Steel

A : -200 Corn 300 Steel

Calculations

- Production with trade (b): Brazil produces steel only and Argentina produces corn only.
- Trade (c): Brazil sells steel and buys corn; Argentina does the reverse.
- Consumption with trade (d): Production - units sold (+ units bought)
- Gains from trade (e): Compare consumption with and without trade.
Because consumption is higher for all goods in both countries, they will both agree to this trade.

Answer

	Brazil		Argentina	
	Steel	Corn	Steel	Corn
(a) No Trade (cons/prod)	500	150	100	400
Trade:				
(b) Production w/ trade	800	0	0	800
(c) Trade	-200	300	200	-300
(d) Consumption w/ trade (b)+(c)	600	300	200	500
(e) Gains from trade (d)-(a)	100	150	100	100

$600 - 500$ $200 - 100$

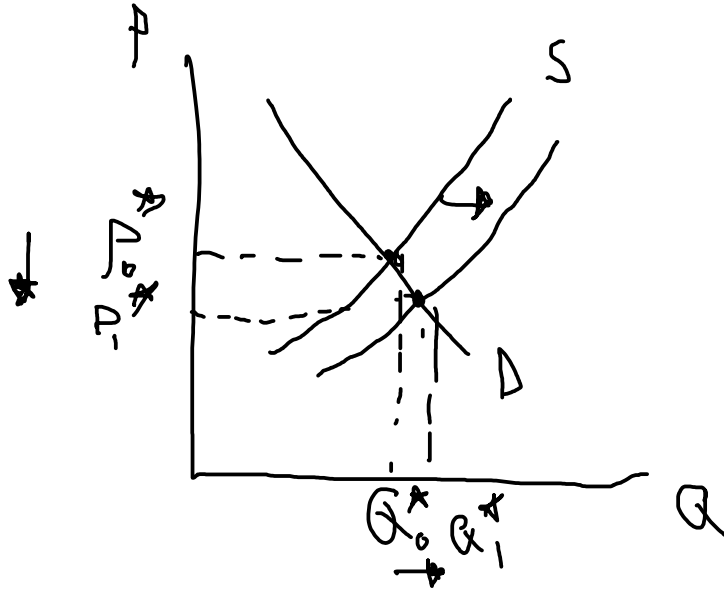
Question 2

Explain if and how each of the events below affects the equilibrium price and quantity in the market for backpacks. Make sure to describe whether each event affects demand or supply and how.

market Backpacks

Question 2.A

A drop in the price of zippers?



Supply

zips are cheaper

So Production cost
are cheaper ~~at~~ produce more

S right $\uparrow \downarrow Q \uparrow$

Question 2.A

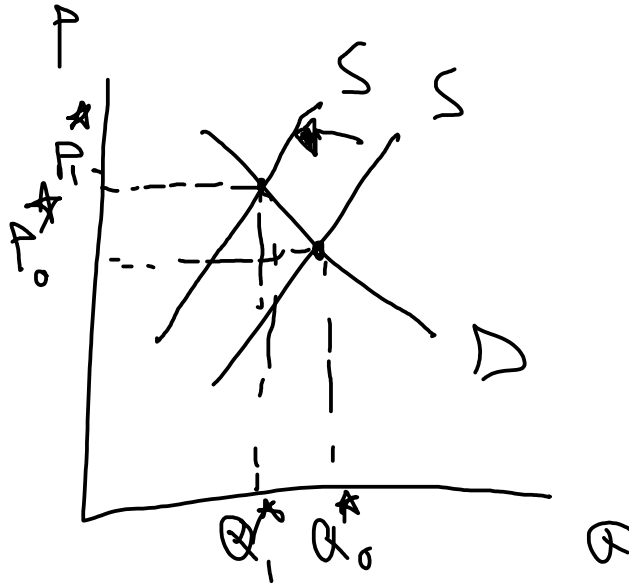
A drop in the price of zippers?

- Zippers are inputs.
- If their price drops, the production cost of backpacks falls
- Supply curve shifts right (increase).
- This will decrease the equilibrium price and increase the equilibrium quantity of backpacks

Question 2.B

decrease supply Left
decrease demand Left

The government introduces a regulation that requires all backpacks to be waterproof?



Production Cost \uparrow

SUPPLY SHIFTS Left

$P \uparrow$ $Q \downarrow$

Question 2.B

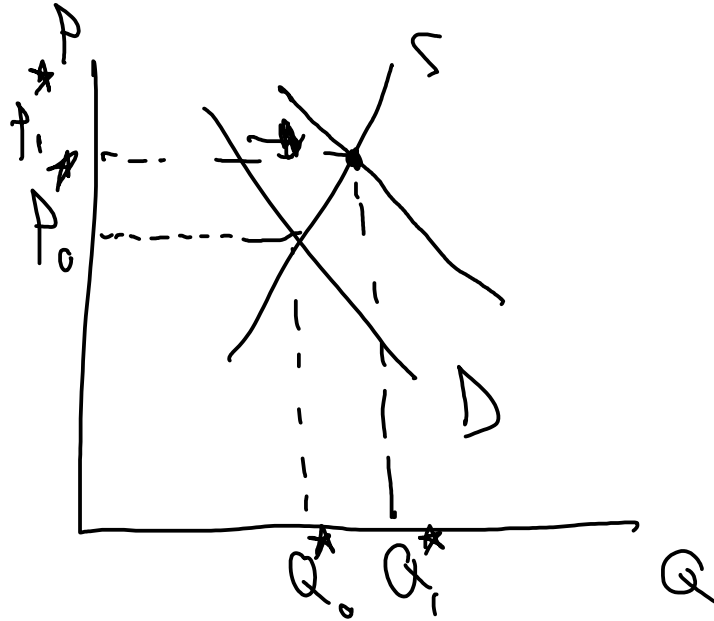
The government introduces a regulation that requires all backpacks to be waterproof?

- The new regulation would force backpack producers to increase their costs to make the waterproof backpacks, leading to the opposite effect as above: an increase in price and decrease in the quantity of backpacks.

Question 2.C

An increase in the average consumer income?

More Money = Spend more



Demand Right

$P \uparrow$ $Q \uparrow$

Question 2.C

An increase in the average consumer income?

- If backpacks are **normal goods**, an increase in consumer income will shift the demand curve to the right (increase) because now consumers will buy more backpacks at every price. This will lead to an increase in price and quantity of backpacks.

inferior goods : Mr. Noodles - consume when income low

When income increases we consume less

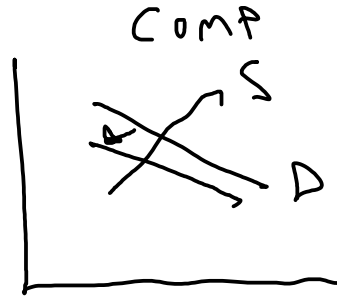
Question 2.D

An increase in the price of messenger bags?



3 case

Sub \rightarrow Pizza Burger \rightarrow Demand Shift Right
Complements \rightarrow fries ketchup \rightarrow Demand Shift Left
independent \rightarrow no relation \rightarrow Stay Same



Question 2.D

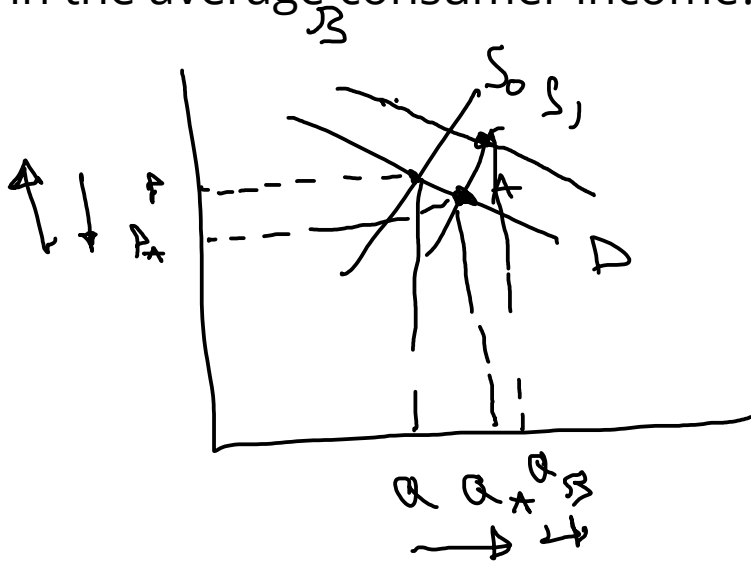
An increase in the price of messenger bags?

- Answer is up to you
- 3 cases
 - Substitutes
 - Compliments
 - Independent
- Substitutes:
 - increase in the price of the substitute will lead to an increase in the demand for backpacks. This will cause the equilibrium price and quantity of backpacks to increase.
- Compliments(Consumed together):
 - The opposite will be true if you say they are complements
- Independent
 - No change

Question 2.E

(a) and (c) occur simultaneously: we see a drop in the price of zippers and an increase in the average consumer income?

1. Price \uparrow
2. Price \downarrow



$$\begin{array}{l} \uparrow \\ \text{Price} = 0 \\ \hline \text{Quantity} = \text{increase} \end{array}$$

Question 2.E

(a) and (c) occur simultaneously: we see a drop in the price of zippers and an increase in the average consumer income?

- (a) leads to a decrease in backpack price
- (c) to an increase backpack price,
- The final effect on price is ambiguous.
- both (a) and (c) lead to an increase in quantity of backpacks, the final effect on quantity is that it will go up.

Question 2.F

A government regulation forces backpack producers to adopt a cleaner (and more expensive) technology. Consumers really like this change and start to like backpacks even more than before?

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A government regulation forces backpack producers to adopt a cleaner (and more expensive) technology. Consumers really like this change and start to like backpacks even more than before?

- Left shift \rightarrow increase in production cost(P) decreasing quantity(Q)
- Consumers liking backpacks even more, means demand shifts to the right, increasing equilibrium quantity and price.
- Combining both effects, equilibrium price increases, quantity is ambiguous
-

Question 3

Assume the following demand and supply curves:

$$Q_s = 2p - 4$$

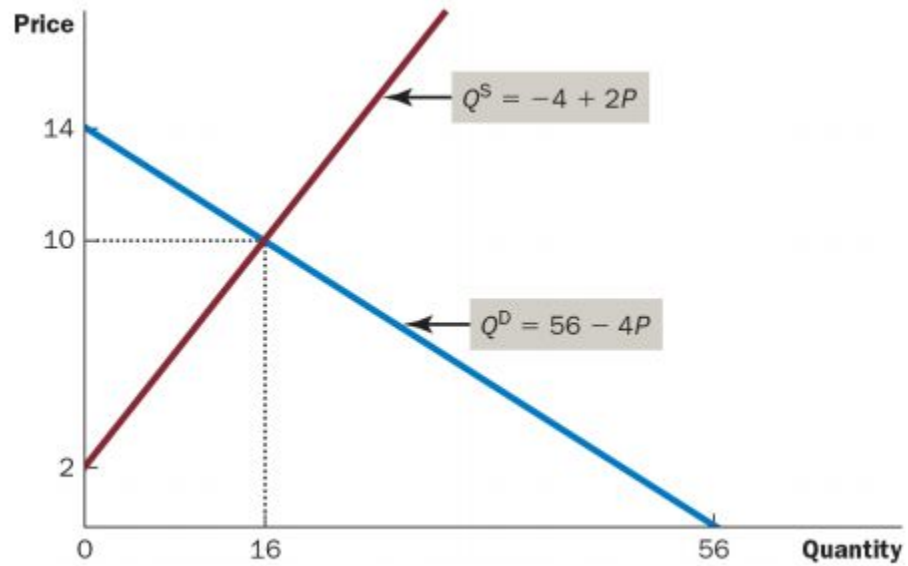
$$Q_d = 56 - 4p$$

Question 3.A

Draw the supply and demand curves.

Question 3.B

Calculate the market equilibrium



Left blank for calculation notes