

Comparative Advantage

2 countries: US and Mexico,
 2 goods: Cars and Beef
 1 input: labor

	US	Mexico
1 car	20	40
1 ton beef	10	30

Absolute advantage and comparative advantage.
 US has the absolute advantage in cars & beef.

Opportunity cost	US	Mexico
1 car (# tons of beef)	$20/10 = 2$ tons of beef To produce 1 car, US will use 20 units of labor. If they use that same labor into production of beef, US could have produce 2 tons of beef (10 labor = 1 ton --> 20 labor = 2 tons).	$40/30 = 1.3333$ tons of beef Mexico could have produced 1.33 tons of beef using the 40 labor allocated for producing 1 car.
1 ton beef (# cars)	$10/20 = 0.5$ car US could have produced .5 cars using the 10 labor allocated for producing 1 ton of beef.	$30/40 = 0.75$ car Mexico could have produced .75 cars using the 30 labor allocated for producing 1 ton of beef.

Although US has the absolute advantage in producing both, it only has the comparative advantage in beef.

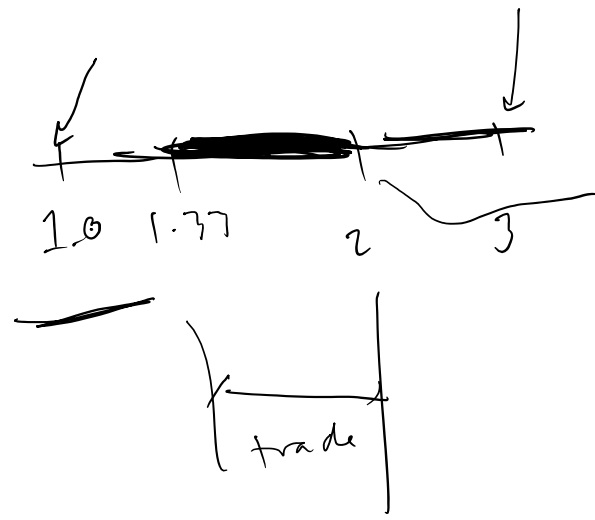
	Absolute advantage	Comp adv
car	US	Mex
beef	US	US

They would benefit from trade.

Will there be a trade at a price of 1 car = 3 tons of beef?
 It costs US 2 tons of beef to produce 1 car. US wants to sell car. US would make money.
 It costs Mexico 1.33 tons of beef to produce 1 car. Mexico wants to sell car.
 --> Both want to export!!!
 It is impossible to have trade at that price.

Will there be a trade at a price of 1 car = 1 tons of beef?
 It costs US 2 tons of beef to produce 1 car. US wants to buy car. US could save.
 It costs Mexico 1.33 tons of beef to produce 1 car. Mexico wants to buy car.
 --> Both want to import!!!
 It is impossible to have trade at that price.

At what price will trade be possible? At a price of 1 car between 1.33 and 2.



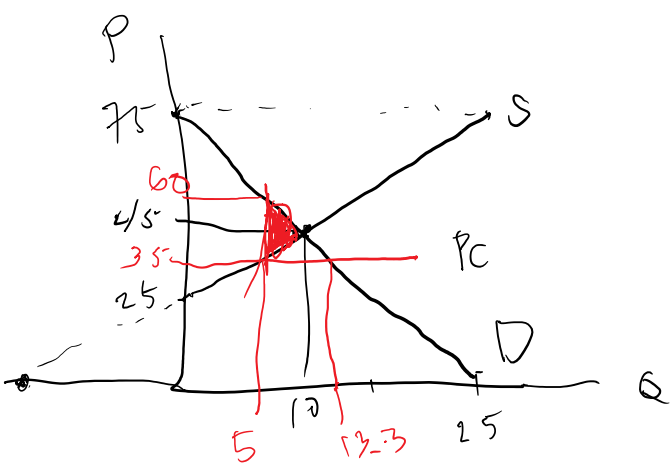
Will there be a trade at a price of 1 car = 1.75 tons of beef?
 It costs US 2 tons of beef to produce 1 car. US wants to buy car. US could save.
 It costs Mexico 1.33 tons of beef to produce 1 car. Mexico wants to sell car. Mexico would make profit.
 --> US wants to import, Mexico wants to export.

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2. Suppose a market for textbooks is characterized by:
 $P = 25 + 2Q$, and $P = 75 - 3Q$

(a) Graph the market. Label all intercepts.
 (b) Suppose a price ceiling of \$35 is imposed on the market. Determine if the price ceiling binds.
 (c) Give an example of inefficiency resulting from this price ceiling.
 (d) Calculate the deadweight loss resulting from this price ceiling. Label the deadweight loss on your graph.

a)
 Supply: $P = 25 + 2Q$ --> When $Q = 0$, $P = 25$.
 Demand: $P = 75 - 3Q$ --> When $Q = 0$, $P = 75$. When $P = 0$, $Q = 25$.



$$0 = 75 - 3Q$$

$$3Q = 75$$

$$Q = 25$$

$$P = 75 - 3Q$$

$$- P = 25 + 2Q$$

$$0 = 50 - 5Q$$

$P = 75 - 3Q$
 $P = 25 + 2Q$
 Subtract: $0 = 50 - 5Q$ --> $Q = 10$ --> $P^* = 45$

b)
 At P ceiling = 35, Govt is telling the sellers to sell at a MAX of 35 where they want to sell at 45.

Would $P_c = 60$ bind? No, because although you tell sellers to sell at a MAX of 60, they are going to sell it at 45 anyway.

c)
 Inefficiency: buyers demand $Q_d = 40/3 = 13.33$ and sellers want to sell $Q_s = 5$ units.
 Price ceiling creates a shortage.

d) When $Q = 5$, $P_d = 60$. $DWL = \text{area of the triangle} = 1/2 \text{ Base} * \text{height} = 1/2 * 5 * 25 = 62.5$.

Find the CS before and after the P ceiling.
 Find the PS before and after the P ceiling.

CS = area above price, below the D, up to Q.
 PS = area below price, above the S, up to Q.

Before the P ceiling:
 $CS = 1/2 * 10 * 30 = 150$

$$35 = 75 - 3Q \rightarrow Q = \frac{40}{3}$$

$$35 = 25 + 2Q \rightarrow Q = 5$$

$$P = 75 - 3Q$$

$$P = 75 - 3 * 5 = 60$$



PS = area below price, above the S, up to Q.

Before the P ceiling:

$$CS = \frac{1}{2} * 10 * 30 = 150$$

$$PS = \frac{1}{2} * 10 * 20 = 100$$

After the P ceiling:

$$CS = \text{triangle} + \text{rectangle} = \frac{1}{2} * 5 * 15 + 5 * 25 = 162.5 \rightarrow \text{Buyer is better off.}$$

$$PS = \frac{1}{2} * 5 * 10 = 25 \rightarrow \text{seller is worse off.}$$

