

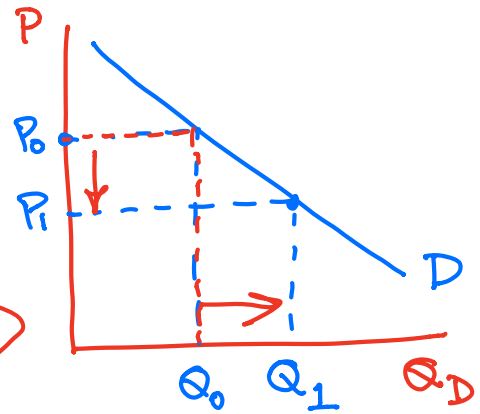
Demand and Supply: Market Equilibrium

In this chapter, we study the demand and supply of a perfect competition and how the market equilibrium is attained.

a function (a line)
Demand is relationship between the price and the quantity the buyer(s) is (are) willing and able to buy.

• At a given price, the quantity bought is called the quantity demanded.

• Statement: When price decreases the demand is higher



wrong!

10 m car. Tesla.

want? Yes.

There is no demand to buy if you do not have the ability to pay.

when price decreases, the quantity demanded increases.

Demand does not change

Change in Demand and Change in Quantity Demanded

To be seen later.

• Demand increases: At a given price, the quantity demanded increases.

• Quantity Demanded increases: When price decreases the quantity demanded increases.

Demand? for artificial heart?

100\$.

- no willingness to pay.

Law of Demand: Given all factors being equal, if the price decreases (increases) the quantity demanded increases (decreases).

nothing that can impact Demand has changed.

change in opposite directions.

⇔ Price and quantity demanded have inverse relationship

⇔ Demand curve has negative slope

Economists state this Law of Demand from observations in the market. } is not always true

Example: A demand curve is given by a function,

(Linear D) Demand: $P = 70 - \frac{1}{5}Q_D$

intercept $P = \text{price}$
 $Q_D = \text{Quantity demanded.}$

$(Q_D = 0, P = 70)$
 $(P = 0, Q_D = 350)$

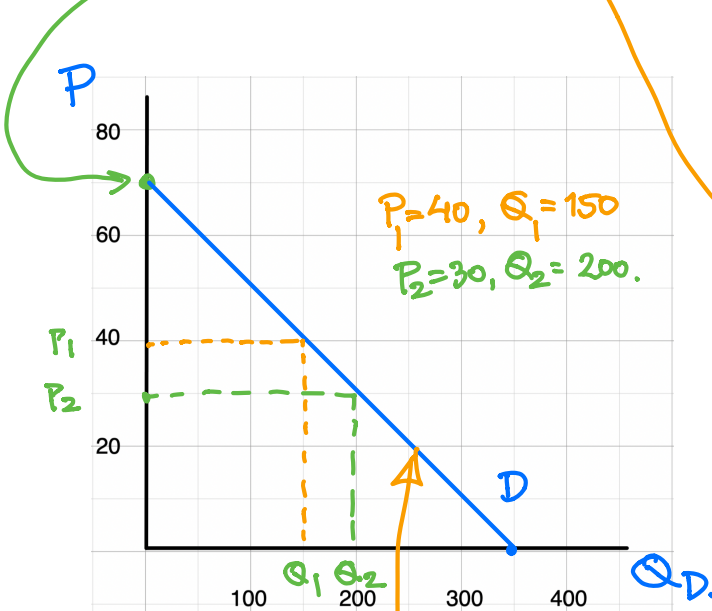
$$0 = 70 - \frac{1}{5}Q_D$$

$$\frac{1}{5}Q_D = 70$$

$$Q_D = 70 \times 5 = 350$$

slope = $-\frac{70}{350} = -\frac{1}{5}$

Plot of Demand Curve:



Economists always draw graph of Demand with P on vertical axis and Q_D on horizontal axis

when Economists write functional form of D it can be

Demand: $P = 70 - \frac{1}{5}Q_D$

Demand: $Q_D = 350 - 5P$

(OR)

Instant Noodle.

Lower income \Rightarrow Higher Demand

Inferior Product (good).

Factors that can change the Demand

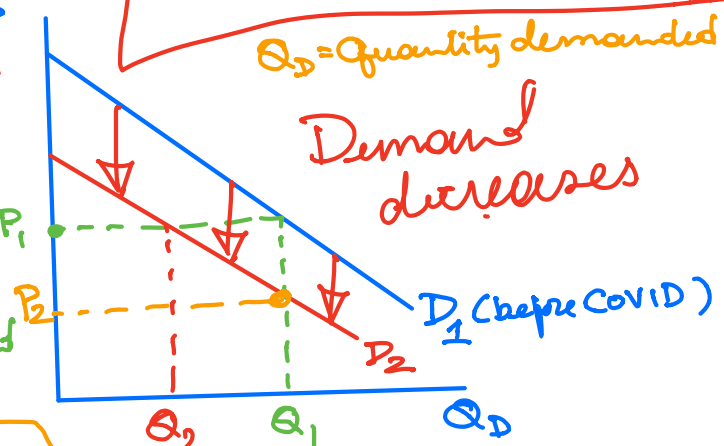
1. Income COVID-19 causes the buyer's income to decrease.

\Rightarrow Demand decreases from D_1 to D_2

because at any price P_1

Before COVID-19, quantity demanded $P_1 = Q_1$

with COVID-19, quantity demanded $= Q_2$



2. Population (number of buyers)

more buyers \Rightarrow higher demand.

Free Trade Agreements.

Lazada - Shopee - Online Market.

Before COVID 19, at P_1 , $Q_D = Q_1$

If we want the same $Q_D = Q_1$ with lower D at D_2 , the price has to be lower at P_2 .

3. Taste of Consumers - fashion.

4. Expectation gasoline is announced to decrease tomorrow.
price. \Rightarrow D today is lower.

5. Prices of related goods

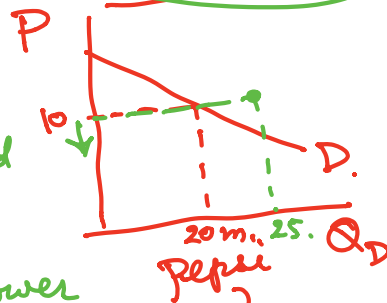
a. Substitutes: Pepsi. & Coke.
Coffee & Tea.

moves in the same direction
If price of coke increases,
D for Pepsi ~~lowers~~ higher

b. Complementary: X & Y are consumed together

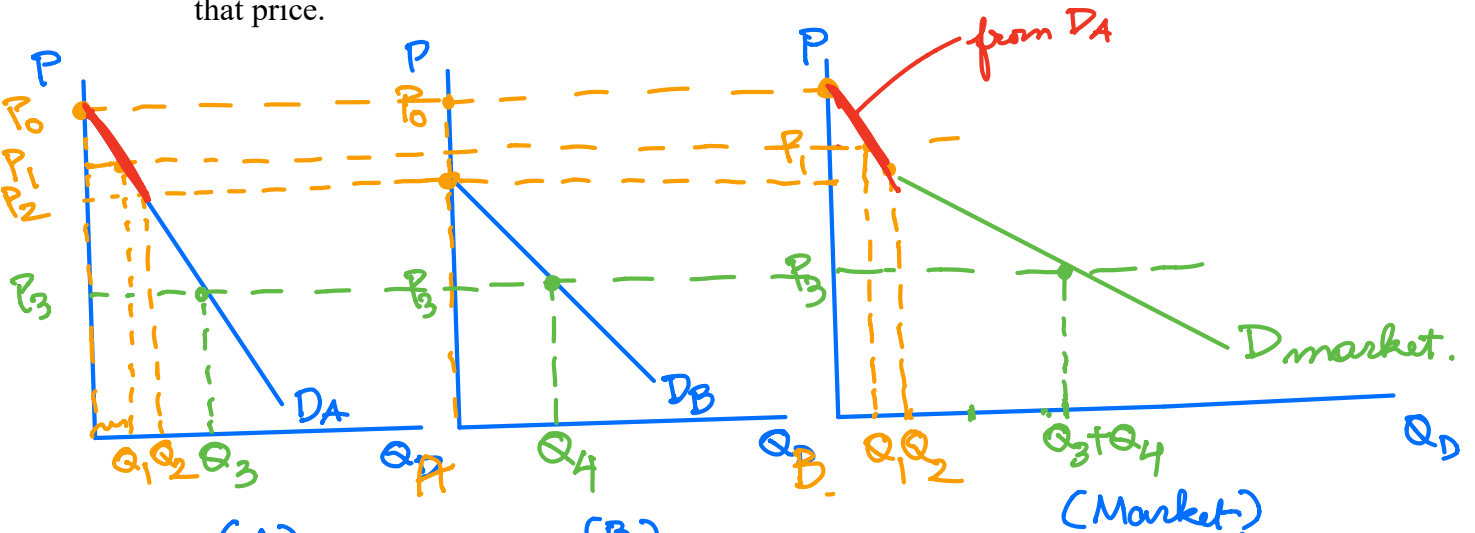
Car & Gasoline.

gasoline price lower \Rightarrow D for car higher } opposite direction.



Individual and Market Demands

- Market demand is the summation of individual demands of all consumers in the market.
- At each price, the quantity demanded of the market is sum of all quantities demanded of all consumers at that price.



(A)
 $P_0, Q_A = 0$
 $P_1, Q_A = Q_1$
 $P_2, Q_A = Q_2$
 $P_3, Q_A = Q_3$

(B)
 $P_0, Q_B = 0$
 $P_1, Q_B = 0$
 $P_2, Q_B = 0$
 $P_3, Q_B = Q_4$

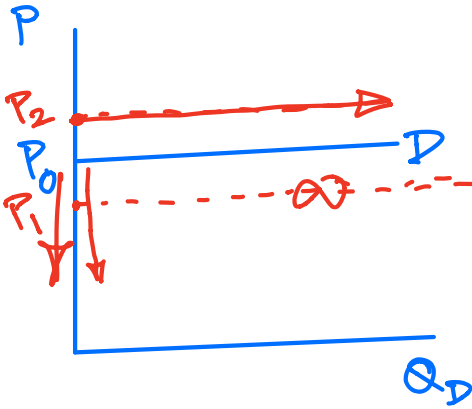
$P_3 = Q_3 + Q_4$

Extreme Cases of Demand Curve

- Horizontal Demand

D is parallel to the Q_D axis.

at price P_0 (or lower)

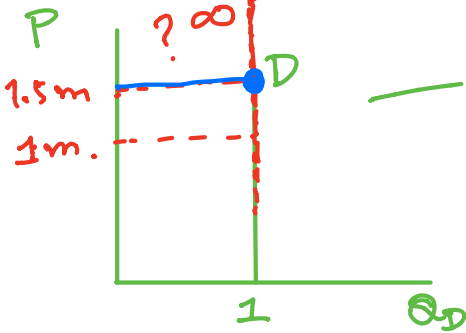


Quantity demanded is infinity ∞
 - buyers want to buy as much as available in the market.
 - sellers can always sell all they can produce at price P_0 .

But at price $P_2 > P_0$, $Q_D = 0$

This is the case when buyers can choose to buy from many sellers selling the same product. (homogeneous)

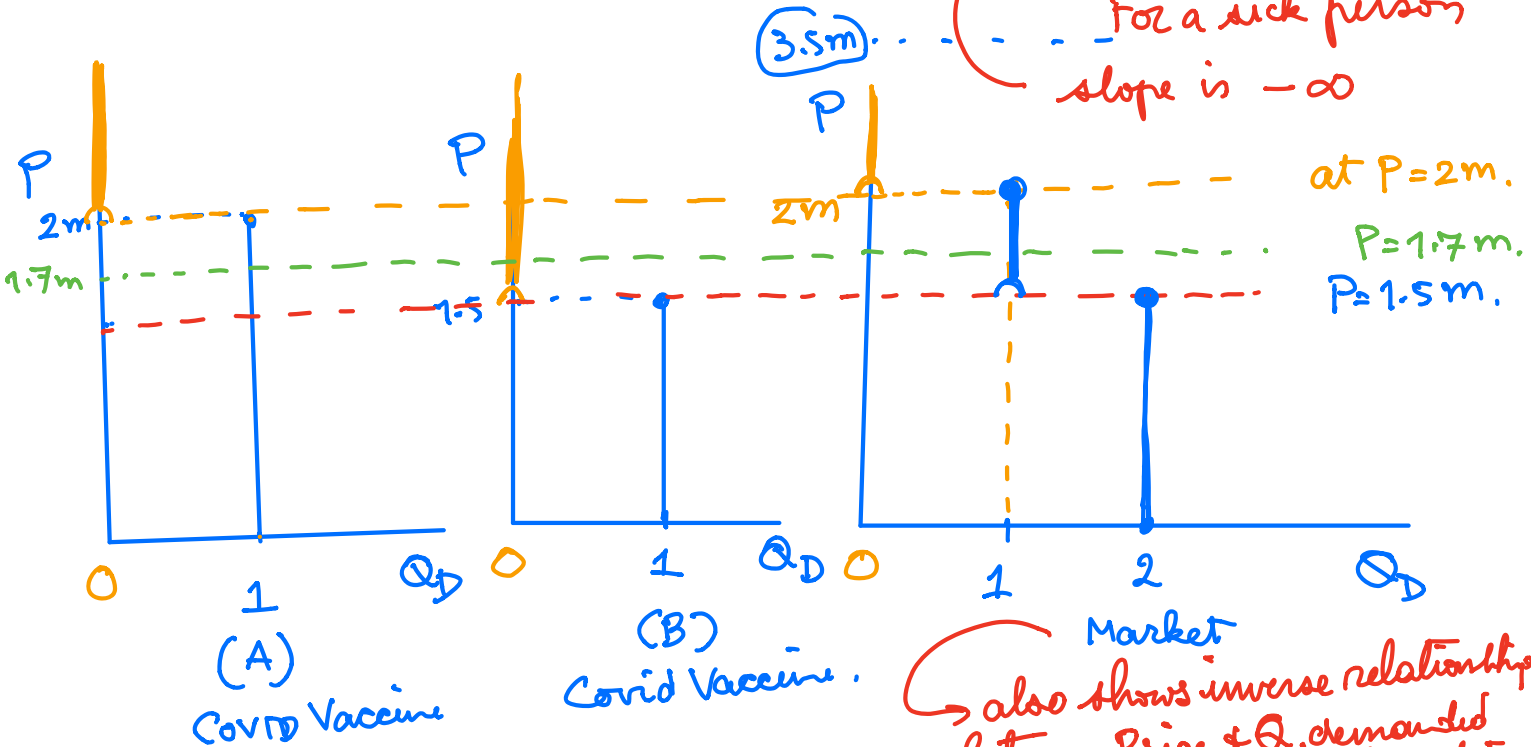
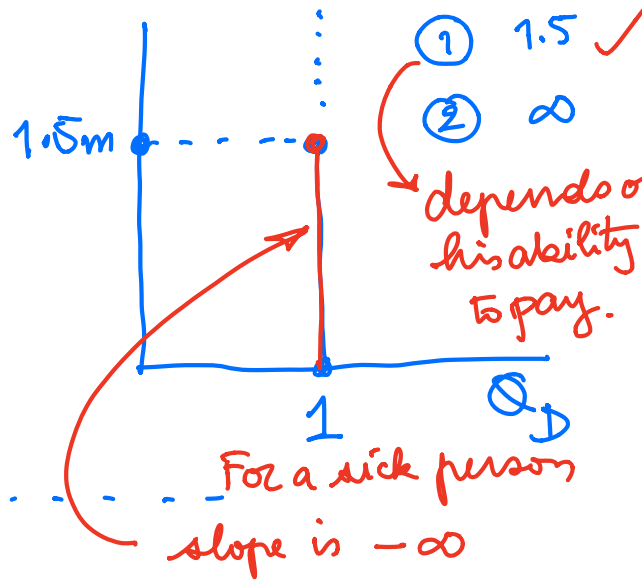
- Vertical Demand



Demand for artificial heart of a patient who needs 1.

HW How the demand increases in each of these extreme cases?

Example: What is the individual demand of a person who needs a lung transplant? Does the market demand has a negative slope?



If market consists of millions of patients who need artificial hearts, the market demand will look close to normal D whose slope is neg.

Challenge Question: If individual demands of consumers are all horizontal but at different prices, what will be the market demand?

