

# Chapter 3

Mar 18, 20  
Wednesday

\* Market : (Suppliers) البيعوا الى الناس (Demanders) يشتروا

⇒ any institution ~~that~~ or mechanism that brings together demanders (buyers : يشتروا) and sellers (suppliers : البيعوا).

مثل السوبرماركت أو Amazon , Ali express

⇒ eg : Supermarket , Amazon.

\* Demand shows various amounts of product that are willing and able to buy at each specific price in a given time.

\* Price increases  $\Rightarrow$  Quantity demanded decreases

So: There is an inverse relation between price and quantity.

$\hookrightarrow$  Law of Demand.

\* Why there is an inverse relationship between price and quantity demanded?

1- Price is an obstacle (العقبة)

\* كلما ارتفعت الأسعار، انخفضت القدرة على الشراء (تأثير الدخل)

2- Diminishing of marginal utility; the second unit of Pizza gives you less utility than previous one,

كلما زاد استهلاكنا للسلع، الفائدة الأخيرة يعطي أقل منفعة

(زني مثال تناقصية المنفعة)

The consumer will buy the second if its price less than the price of the first one.

$Q \uparrow$ ,  $MU \downarrow$ , you should pay less price

$MU \equiv$  Marginal Utility

علاقة عكسية بين  $P$  و  $Q$ .

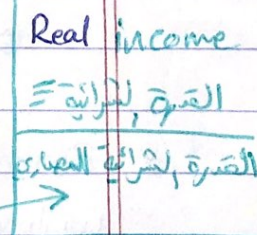


3- Income and substitution effect :-

Real income  $\uparrow$   $\Leftarrow$  (when  $P \downarrow$ )

buy more  $\Rightarrow Q \uparrow$

Purchasing power of money  $\uparrow$



⇒ when price decrease, real income increase, so you can buy more, ∴ quantity demanded also increases.

شرح النقطة 3

4- (x, y) : substitutes (بائلي) ⇒ eg Cola & Pepsi  
for example : chicken :  $P \uparrow \Rightarrow Q_d \downarrow$

⇒ (x, y) are substitutes and:

$$P_x \downarrow \Rightarrow D_y \downarrow \Rightarrow Q_{d(x)} \uparrow$$

eg: x, y ⇒ x: KFC  
y: Poppyes

if  $P_x \downarrow$

$$\Rightarrow D_y \downarrow \Rightarrow Q_{d(x)} \uparrow$$

السلعتين (x, y) يتأثروا ببعضهما البعض

بائلي (مثل كيتو بفرقوا)

عن بعضنا في تنافس تباين

### \* Demand curve :-

● Individual demand curve: quantity demanded by a single buyer at each price level.

الكمية المطلوبة من شخص @ سعر محدد

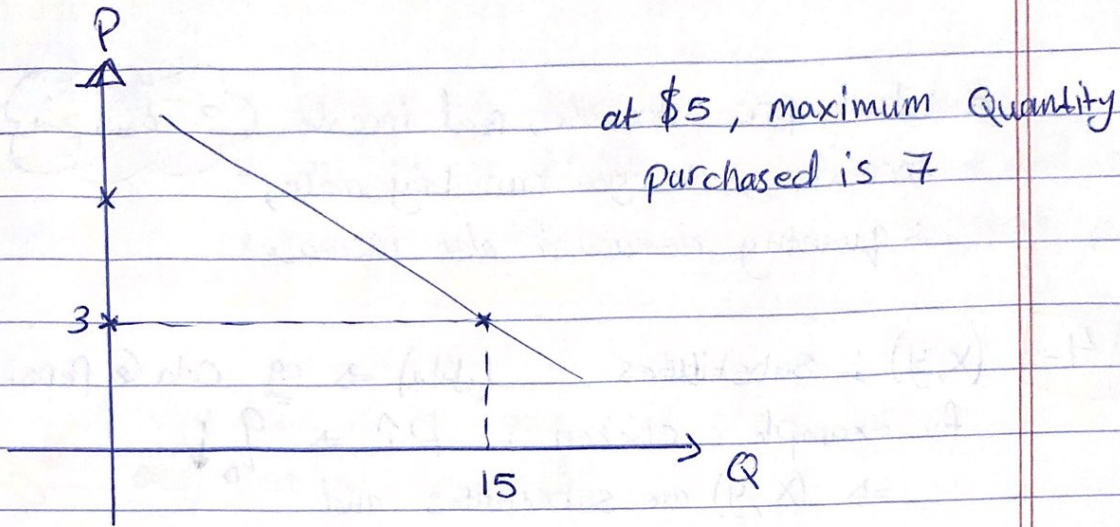
● Market demand curve:

Price	A ( $Q_{d(A)}$ )	B ( $Q_{d(B)}$ )	C ( $Q_{d(C)}$ )	Market Demand
\$5	7	4	6	17
4	9	7	8	24
3	15	10	12	37
2	21	15	16	52
1	28	20	18	

Price : y-axis  
Quantity : x-axis

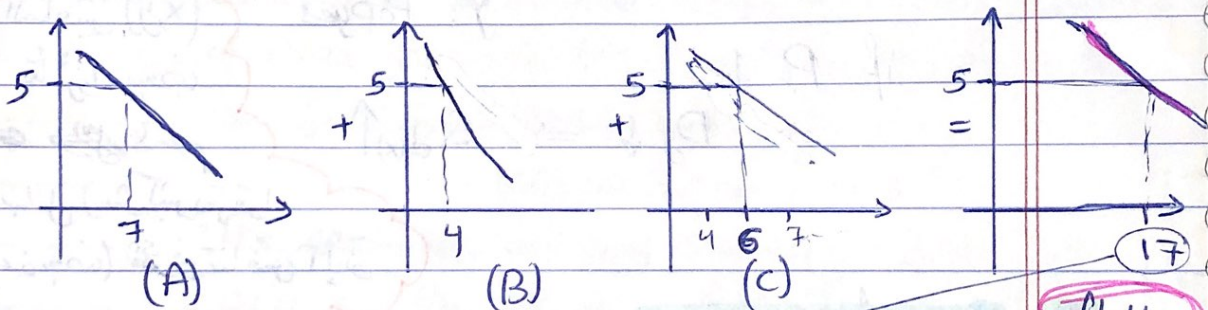
⇒ Market demand curve

↑ Demand curve (Slope is  $\ominus$ )  
(individual A)



\* Market demand curve  $\Rightarrow$  flatter (لا يوجد)

↓ (at price 5)



(7 + 4 + 6) من آخر column باليمين

(يوجد في 0)

slope

أقل

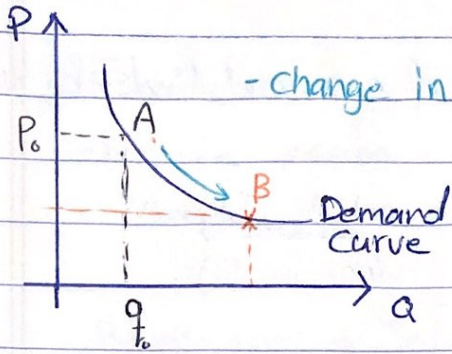
Horizontal (من عمود كثر) (بالنوازل يتم بعد كثر صلب)  $\leftarrow$  قَبِي

Curve A + Curve B + Curve C  $\Rightarrow$  Market demand curve.

$\Rightarrow$  Market

- Demand curve : horizontal summation of individual curves

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Monday



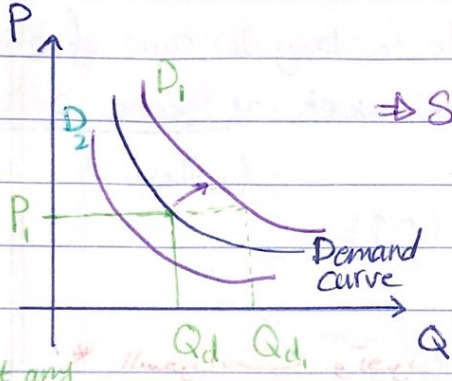
- change in  $Q_d$  (not in D).

due to change in prices.

⇒ Change in  $Q_d$  VS.

Change in Demand:-

$Q_d$ : move from point to another on demand curve, this happens when price of product change.



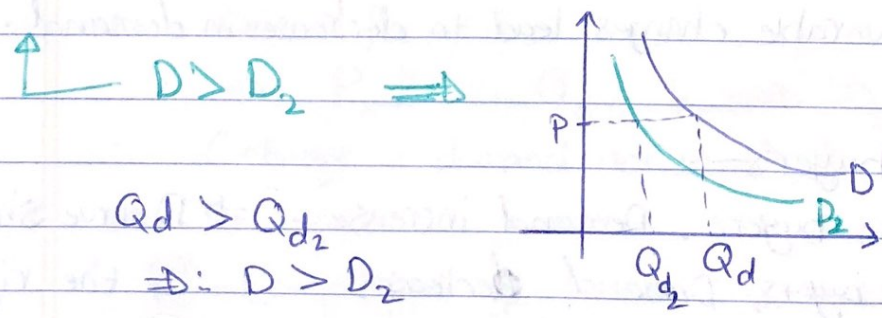
⇒ Shift in Demand (change in D):- shift in the entire demand curve

⇒ At any price,  $Q_{d1}$  will be larger than  $Q_d$ .

at any  $P \rightarrow Q \uparrow$

← های لطیفه عشاق نخب بین آبر D و D1 (لما یصیر Shift)  
مقارنت  $Q_d$  ب  $Q_{d1}$  عند سحر معین (متساوی الجهین).

- \* Shift to right ⇒ ∴  $D \uparrow$ , at each price ⇒ more units.
- \* Shift to left ⇒ ∴  $D \downarrow$ , the  $Q_d$  at each price is lower



Example:- Toyota raises the price of cars and finds the volume of business decline.

السعر لنفس السلعة قبل و بعد  
↓  
change in Qd (not in D).

نفس السلعة.

\* بأي مكان: إذا السعر تغيراً إذن Change in Qd.

Example 2:- Consumer is able to buy 10 cans of coke rather than 5 last week at same price.

⇒ Change in Demand. (السعر ثابت)  
(Shift to right) → (D↑)

\* السعر ثابت وتغيرت الكمية ⇒ إذن change in D.

\* Determinants of demand (shifters):-  
(كل شيء متعلق بها يتغير، ليس للسلعة نفسها)  
تسبب أي بخل في الطلب  
يصير Shift

- 1- Tastes, preferences :- (الأذواق)
- favorable changes lead to increase in demand.
  - Unfavorable changes lead to decrease in demand.

2- # of buyers.

- more buyers, Demand increases ⇒ D curve shift to the right.
- less buyers, Demand decreases ⇒ D curve shift to the left.

### 3- Income :-

- income increases, demand increases, shift to right.
- income increases, demand decreases, shift to left.

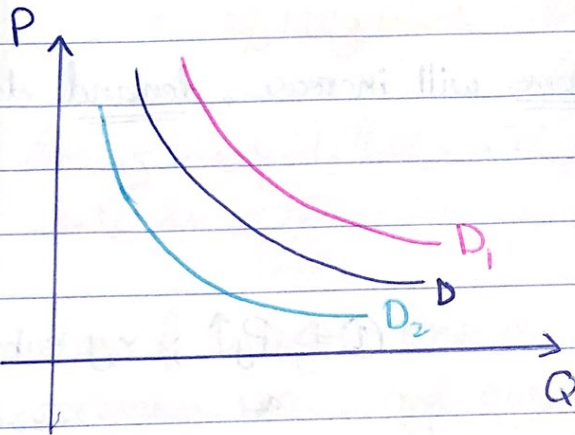
Normal goods

By the way  $\Rightarrow$  Inferior goods (سلع رديئة):

$$I \uparrow \Rightarrow D \downarrow$$

$$I \downarrow \Rightarrow D \uparrow$$

إذا كان سعر  
هناك إذن السلعة رديئة  
(علاقة عكسية)



$\left. \begin{array}{l} D_1: \text{Income, normal.} \\ D_2: \text{less buyers.} \end{array} \right\}$

Shifters. مثال على ال

### 4- Prices of related goods. "سعر السلع التي لها علاقة"

(a) Substitute goods: السلع البديلة  
eg: (KFC, POP), (Cola, Sprite).

x, y substitutes. if price for x  $\uparrow$ , then,  
Demand for y  $\uparrow$

$$\Rightarrow P_x \uparrow \Rightarrow Q_{d(x)} \downarrow \Rightarrow D_y \uparrow$$

(change in demand not in  $Q_d$ ).

(b) Complement goods "سلع متكاملة": those are used together like printer and ink, personal computer and software  
.... etc.

Mar 25, 20

Wednesday

eg  $\Rightarrow x, y$  are complements. (متاد الطابعة والحبر).

if  $P_x \uparrow \Rightarrow Q_d(x) \downarrow \Rightarrow D_y \downarrow$

$\Rightarrow$  inverse relation

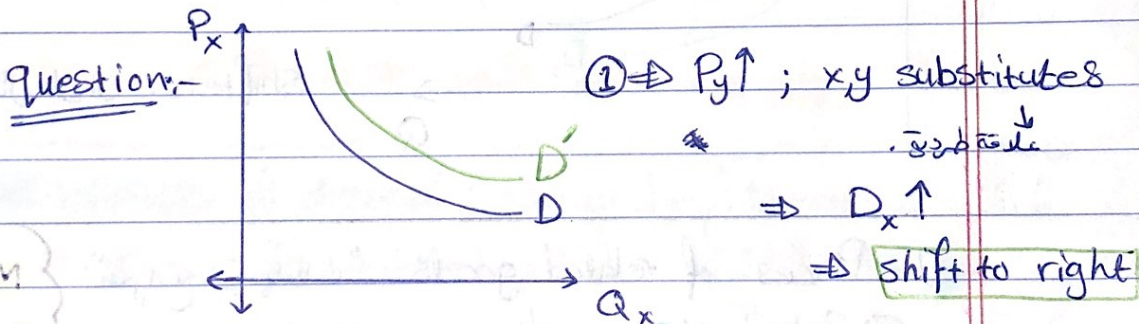
### 5- Consumer expectation about prices and income

- expected prices will increase, demand increases

← لانو "متوقع" يرتفع ، الناس بديا تلتحق تشتري "  $D \uparrow$  " قبل ارتفاع الأسعار .

- expected that income will increase, demand decreases

← لانو ربح أجنبي يدخل الحاي ، كياتي بمتوقعة مع دخل الشهر الجاي لانو ربح يزيد .



② Income  $\uparrow$  ,  $D_x \downarrow \Rightarrow$  shift to left. X

بزيطش نجارب برون مانعرف نوع السلعة (رديئة ولا عادية)

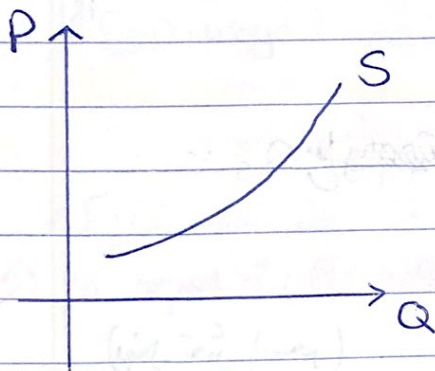
$\Rightarrow$  if : normal :  $D_x \uparrow \Rightarrow$  right

if : inferior :  $D_x \downarrow \Rightarrow$  left



## \* Supply Curve :-

- Supply shows amounts of a product that producer is willing and able to produce and sell at each specific price during specific time.



الكميات التي يرغب المنتج إنتاجها وبيعها عند أسعار محددة وفي أوقات محددة.

slope = (+) "متزايد"  
عكس ال Demand curve

لما يزيد السعر، كمية الإنتاج تزداد، مع أن المنتج يبيع أكثر

⇒ Law of Supply :- there is a direct "positive" relation between prices and quantities supplied.

other things equal :  $P \uparrow \Rightarrow Q_s \uparrow$   
 $P \downarrow \Rightarrow Q_s \downarrow$

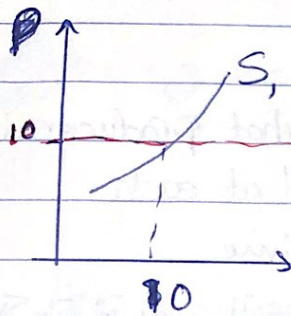
إذا المنتج غير المستهلك

⇒  $P \uparrow \Rightarrow$  Revenue  $\uparrow$  → supply  $\leftarrow$   
 $\Downarrow$  Profit  $\uparrow \Rightarrow$  produce more  $\uparrow$   
 more production  $\Leftarrow$

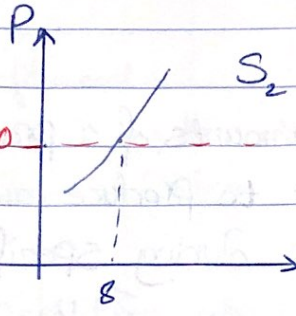
- Market Supply :- The horizontal summation of the quantities supplied by all producer of each price

Mar 31, 2020  
Monday

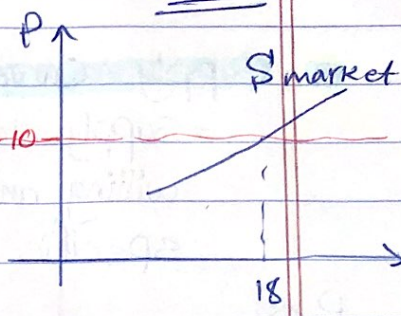
Producer 1



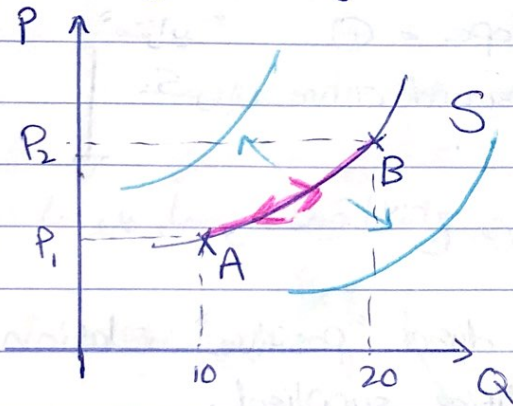
Producer 2



Market



\* Change in  $Q_s$  VS. Change in Supply :-



A ↔ B: Change in  $Q_s$

(تغير في الكمية المعروضة)

⇒ Change in  $Q_s$ : The movement from 1 point to another point on a fixed Supply curve which is caused by a change in the price of the same product.

⇒ Change in Supply: Shift to the right / left → S ↓

S ↑ ← determinants (عوامل) ↓

↳ زيادة

↳ Change in the entire supply curve, by changing in one or more of the determinants :-

if S ↑ ⇒ shift S to right.

if S ↓ ⇒ shift S to left.

Determinants of Supply →

1- Resource prices : مثل المثال (أجور عمال) wages

أو: إذا زاد سعر الكهرباء ← يؤثر .

↓  
⊗ Resource prices ↑ , cost ↑ , Profit ↓ , Supply ↓

⊗ Ex①: wage ↑ , cost ↑ , Profit ↓ , Supply ↓ .

\* ال wage يؤثر على ال Supply من غير ال Demand "إذا لم يتغير ال Demand!"

⊗ Ex②: An inc. in the price of cheese used in pizza,  
cost ↑ , supply ↓

2- Technology : Technological improvement means more efficient production, cost ↓ , supply ↑ , Shift supply curve to right .

3- Taxes and subsidies → "الدعم الحكومي"

- Business tax is treated as cost,  $T \uparrow$  ,  $S \downarrow$
- Subsidy decreases cost ,  $S \uparrow$

4- Prices of substitutes in production "السلع البديلة"

- If (x,y) are substitutes in production , then :

$P_x \uparrow$  ,  $S_y \downarrow$

إذا سعر المنتج x زاد ، كل الناس يتصور  
بصاير منتج x عنشان تربح أكثر عن بطل  
هذا منتج y ←  $S_y \downarrow$

↓  
العلاقة عكسية  
{ P , S }  
{ x , y }

### 5- Producer expectation:

Producers expect that the product price in future will increase, Supply decrease → "تقلوا الإنتاج وعتشان" "يقلوا الإنتاج المرزبوط والعالى لما ترتفع الأسعار ويريدوا أكثر"

### 6- Number of sellers:

if # of sellers ↑, S ↑

زيادة suppliers لأي سعة وإنتاجها يزيد

Apr. 1. 2020

Wednesday

### \* Market equilibrium:

Prices	Q <sub>d</sub> (إتي مطلوب)	Q <sub>s</sub> (إتي يتجو)	Q <sub>s</sub> - Q <sub>d</sub> (العجز)
5	10	60	50
4	20	50	30
⇒ 3	35	35	0 ⇒ Market equilibrium point
2	55	20	-35 (في عجز)
1	80	5	-75

⇒ Eq. point:  $Q_s = Q_d$

→ Eq. price = 3 ( $P_e = 3$ )

Eq. quantity = 35 ( $Q_e = 35$ )

Apr. 6. 2020

Monday

⊙ ⇒ @ prices above equilibrium, say = 4 :-

∴  $Q_s > Q_d$  ⇒ surplus "excess supply"

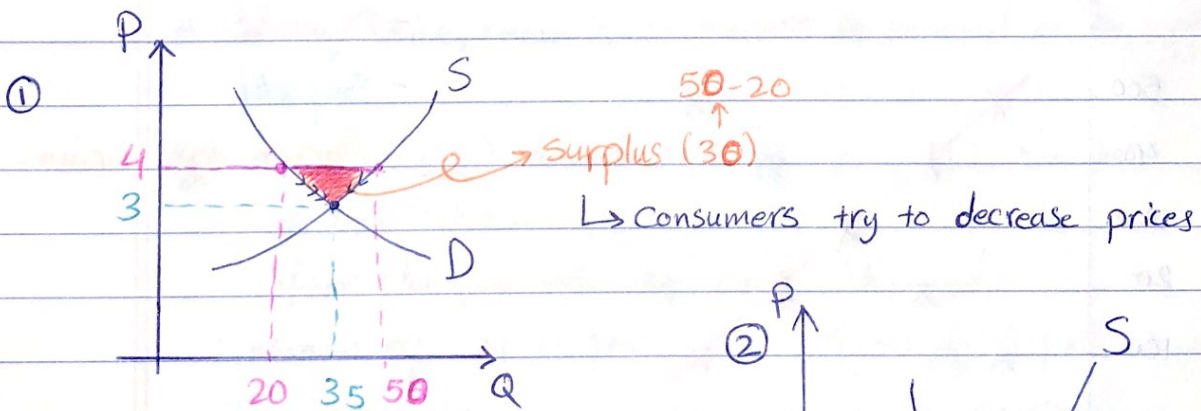
$Q_s - Q_d = 50 - 20 = 30$  زيادة في إسلادي

\*  $\Rightarrow$  @ prices below equilibrium, say = 2 :-  
 $Q_s < Q_d \Rightarrow$  shortage "excess demand"  
 $Q_s - Q_d = 20 - 55 = 35$  ← زيادة في الطلب  
 35 ← shortage

\*  $\Rightarrow$  @ equilibrium:  $Q_s = Q_d \Rightarrow Q_s - Q_d = \text{Zero}$ .  
 no surplus, no shortage.

تعريف Equilibrium price: the price where quantity demanded equal quantity supply.

- If  $P > P_e \Rightarrow$  surplus  $\Rightarrow$  competition between producers to decrease prices ( $P \downarrow$ ) till  $P = P_e$
- If  $P < P_e \Rightarrow$  shortage  $\Rightarrow$  competition between consumers to increase prices ( $P \uparrow$ ) till  $P = P_e$



Shortage  $\Rightarrow$  producers should pay more because consumers increase prices  
 $P = P_e$  desired  $\uparrow Q_s$

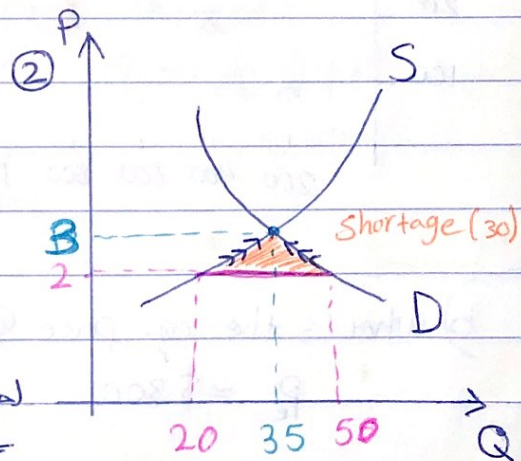


Illustration:

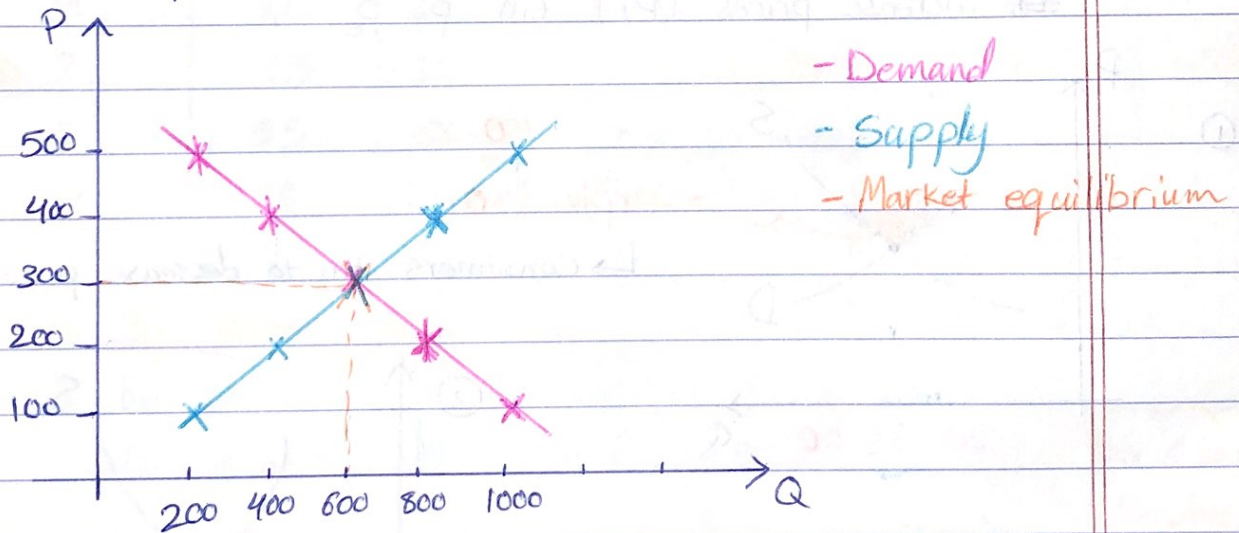
The following table represents the supply and demand for **one** seller and **one** buyer, suppose the market contains 10 buyers and 10 sellers:-  $\Rightarrow$  One

لواجر - مائة في 10

Price	Qd	Qs	Market Qd	Market Qs
100	100	20	1000	1400
200	80	40	800	1200
$\Rightarrow$ 300	60	60	600	600
$\Rightarrow$ 400	40	80	400	800
New 500	20	100	200	1000

$\downarrow$   
e

a)  $\Rightarrow$  Plot (الرسم) the market demand & the market supply.



b) What's the eq. price & quantity in this market?

$P_e = \$300$  ,  $Q_e = 600$  units

c) @the price of \$200, will be a shortage or surplus? And by how much? Will price tend to increase or decrease?

Sol:- @ \$200  $\rightarrow Q_s = 400, Q_d = 800$

$Q_s < Q_d \Rightarrow$  shortage; by 400,  $P \uparrow$

d) When the government sets the price of \$400, will there be surplus or shortage? And by how much?

Sol:- @  $p = \$400 \rightarrow Q_s = 800, Q_d = 400$

$Q_s > Q_d \Rightarrow$  surplus; by 400

e) Suppose the government purchased 400 units of each price level, what's a new eq. price and quantity? @ old eq. price, there is an **excess** demand or supply?

Sol:- أي حيا بشتري ← بآثر على ال demand (بزيدي)

$\Rightarrow$  New table:-

after changes  $\Rightarrow$  eq. point changed.

$\Rightarrow$  new eq.: @  $p = \$400$

@ old eq.:  $p = \$300$   
shortage

$\Rightarrow P_e = \$400; Q = 800$  units

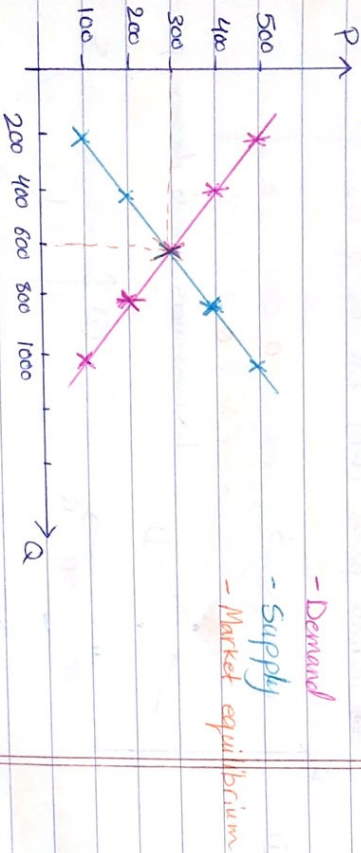
$Q_s - Q_d = 600 - 1000 = -400$  "excess demand"

**Illustration:**

The following table represents the supply and demand for one seller and one buyer, suppose the market contains 10 buyers and 10 sellers :-  $\Rightarrow$  One

Price	Qd	Qs	Market Qd	Market Qs
100	100	20	1400	200
200	80	40	1200	400
$\Rightarrow$ 300	60	60	600	600
$\Rightarrow$ 400	40	80	400	800
New 500	20	100	200	1000

a)  $\Rightarrow$  Plot (p,q) the market demand & the market supply.



b) What's the eq. price & quantity in this market?  
 $P_e = \$300$ ,  $Q_e = 600$  units

c) @ the price of \$200, will be a shortage or surplus? And by how much? Will price tend to increase or decrease?

Sol: - @ \$200  $\rightarrow$   $Q_s = 400$ ,  $Q_d = 800$   
 $Q_s < Q_d \Rightarrow$  shortage ; by 400,  $P \uparrow$

d) When the government sets the price of \$400, will be there surplus or shortage? And by how much?

Sol: - @  $P = \$400 \rightarrow Q_s = 800$ ,  $Q_d = 400$   
 $Q_s > Q_d \Rightarrow$  surplus ; by 400

e) Suppose the government purchased 400 units of each price level, what's a new eq. price and quantity? @ old eq. price, there is an excess demand or supply?

Sol: - (p,q) demand و الة الة  $\rightarrow$   $Q_s = 400$   
 $\Rightarrow$  New table:  $Q_s = 400$   
 after changes  $\Rightarrow$  eq. point changed.  
 $\Rightarrow$  new eq.: @  $P = \$400$  @ old eq.:  $P = \$300$   
 $\Rightarrow P_e = \$400$ ;  $Q = 400$  units  
 $Q_s - Q_d = 400 - 1000 = -600$  "excess demand"  
 Shortage  $\downarrow$

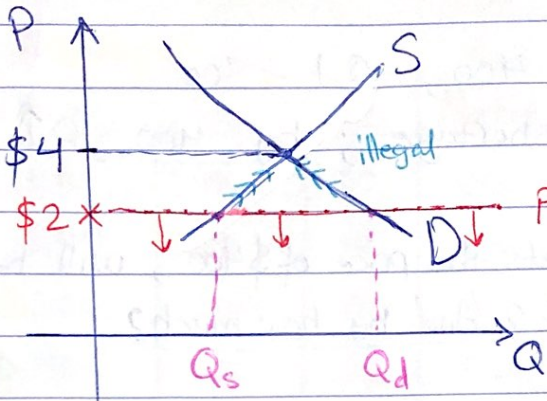


Apr. 8. 20

Wednesday

السبب  
①

\* Price ceiling (سقف): maximum legal price a seller may charge, typically placed below equilibrium



منوع من البيع فوق ال \$2  
للسلعة المعنية

price ceiling ↑  
↳ below equilibrium

\* كل من يبيع بسعر \$2  
(إذا باعوا بأقل مما هي عرضة)  
معارضة وليس تكونوا خسرانيين

→  $Q_d > Q_s \Rightarrow$  shortage

⊗ Since  $Q_s < Q_d \Rightarrow$  Persistent shortage (عجز مستمر)

لا تؤولوا لبيع ورفع السعر عشوائياً  
← وهذا يكون بسبب الحكومة (عندما سقف price ceiling)  
prevent market to reach equilibrium.

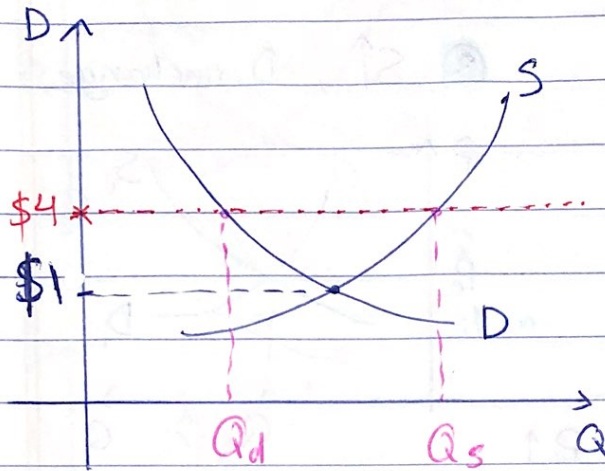
الحل: الحكومة ما تدخل: (أما بنظام أسواق) note

sol ⇒ Black market (لما نبيع سعر غير قانوني)

(لما يكون في shortage يكون الناس مستعدة تدفع أي سعر  
عشان تحصل على السلعة التي توفرها قليل  
زي مثال، معدات، لطية في هاد الوقت  
↳ Black market

②

\* **Price floor** : minimum legal price a seller may charge, typically place above equilibrium.  
 → "منع تنزيل تحت حد السعر"



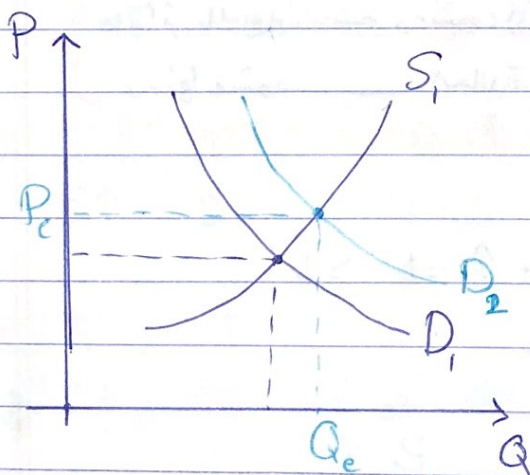
$Q_d < Q_s$   
 ↓  
 Persistent surplus

• هاد لما الحكومة بربها تساع  
 السعرب دزي أسعار  
 النقط والكمات لبيع

floor ⇔ eq. لو الخط فوق ال

ceiling ⇔ eq. لو الخط تحت ال

①  $D \uparrow, S \text{ unchange} \Rightarrow P_e; Q_e$

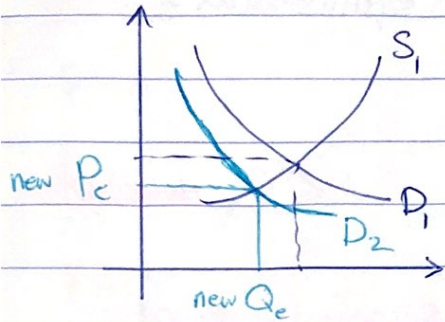


$P_e \uparrow$   
 $Q_e \uparrow$

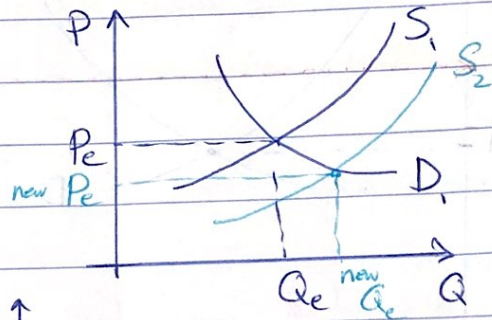
← واصلت  
 دلتاي بتغير

**A**

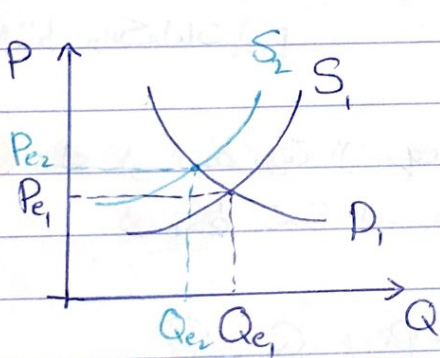
②  $D \downarrow, S$  unchange :-  $P_e \downarrow$   
 $Q_e \downarrow$



③  $S \uparrow, D$  unchange :  $P_e \downarrow$   
 $Q_e \uparrow$



④  $S \downarrow, D$  unchange :-



$P_e \uparrow$   
 $Q_e \downarrow$

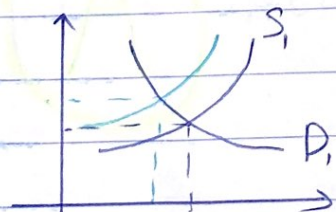
\* السؤال يكون : بطينا احوال  
determinants

السيلاى (مثلا) : زي ال wages

ما بتاثر بالسيفان ← ومشوف اذال wages زادوا أو نقصوا  
ومنها مشوف الحالة ال 4 المذكورة سابقاً

بتاثر عـ ال supply

eg: \* If technology  $\downarrow \Rightarrow$  cost  $\uparrow \Rightarrow S \downarrow$



$\Rightarrow Q_e \downarrow$   
 $P_e \uparrow$

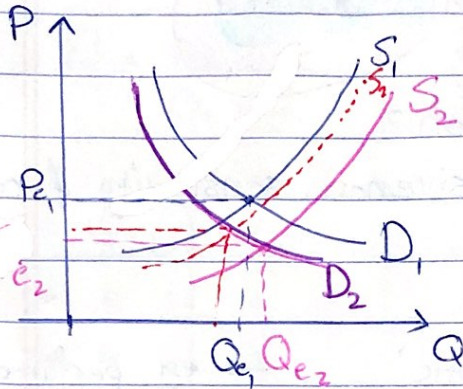
لَمَّا ال D و S ←

يَتَغَيَّرُ ابْتِغَاءً

الوقت

**B**

①  $S \uparrow, D \downarrow$



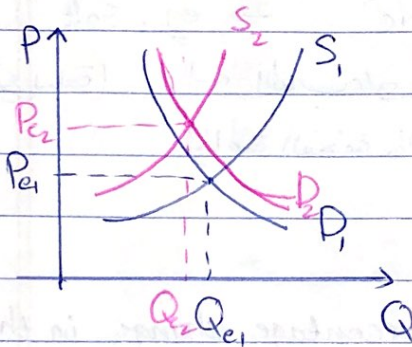
$\Rightarrow P_e \downarrow$

$Q_e$ : uncertain

مسار shift ال

⊗ أي إرتي بزياد : بروج اليمين

②



$S \downarrow, D \uparrow$

$\Rightarrow P_e \uparrow$

$Q_e \downarrow$

⊗ ال Price ال يتبدل يا بترتبه ال كذا ال Quantity

ال shift ال (بترتبه او بتبدل) ←  $Q$ : uncertain

⊗  $S \downarrow, D \uparrow$  :  $P_e \uparrow$  ;  $Q_e$ : uncertain

$S \uparrow, D \downarrow$  :  $P_e \downarrow$  ;  $Q_e$ : uncertain

لما  
تتغير  
بعض

⊗ ③  $S \uparrow, D \uparrow$  :  $P_e$ : uncertain ,  $Q_e$  :  $\uparrow$  (بزيادة S و D)

④  $S \downarrow, D \downarrow$  :  $P_e$ : uncertain ,  $Q_e$  :  $\downarrow$