

Absolutely Fundamental of

DEMAND AND SUPPLY

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COMMERCE



Note and Exercise

ABSOLUTELY FUNDAMENTAL OF
DEMAND AND SUPPLY

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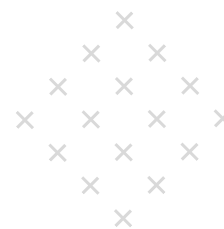
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We would like to express our gratitude to Almighty for giving us the strength, courage and health to complete this e-book entitled Absolutely Fundamental of Demand and Supply.

This e-book is a valuable contribution to the department. It is suitable for new students who want to study the subject of economics. The e-book is written with simple and clear explanations to achieve the course learning objectives.

We believe students should be provided with a good understanding of fundamental of demand and supply theory. This e-book fulfils this role by guiding and assisting students towards this goal. The writers of this book should be recommended for their dedication and effort in coming up with this text.

We also would like to record our appreciation and thanks towards all parties who have provided encouragement and helpful comments towards the arrangement of this e-book. It is our hope that this e-book would help students to gain a better understanding about the Microeconomics course, particularly for Demand and Supply topic .

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ABSTRACT

Demand can be defined as a desire of a consumer or buyer to buy a good or service, accompanied by ability and willingness to pay in a given period of time, *ceteris paribus*. While supply refers to the quantity of goods that offered for sale by the producers at certain price in a given time period, *ceteris paribus*. These two concepts are the basis of the interaction in economics happen. This e-book also explained about the law, the determinant, the curve and others that related to these two theories.

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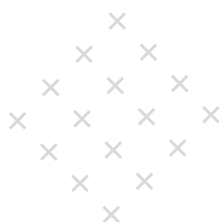


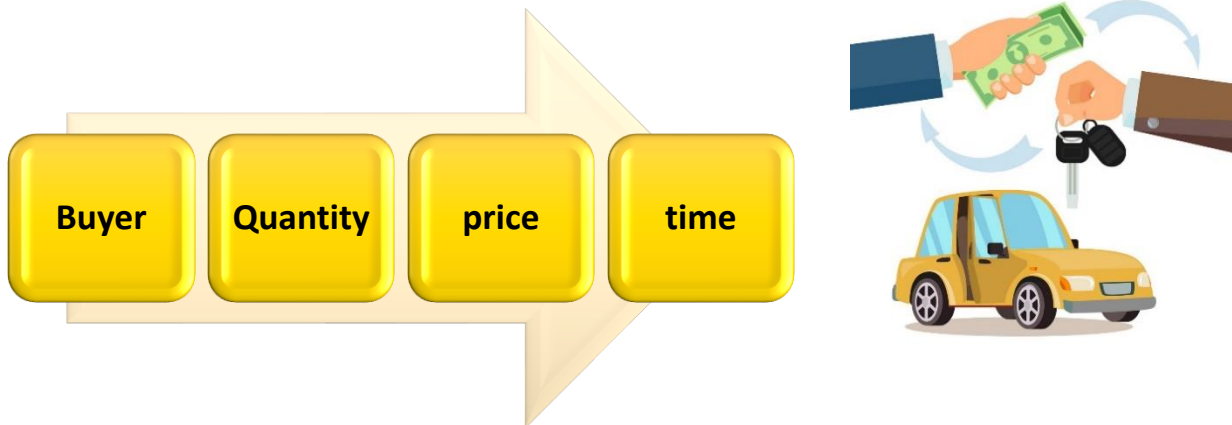
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DEMAND THEORY

1.1 Definition of Demand

Demand refers to the desire of a consumer to buy any quantity of goods or services with their ability to pay in a given period of time at an alternative price (*ceteris paribus*).



Quantity demanded refers to the quantity of goods or services that are purchased at a certain price in each period of time.

1.2 Law of Demand

With the assumption of other factors remaining constant and all factors are equal, when prices of goods or services decrease, quantity demanded will increase while when price of goods or services increase, the quantity demanded will decrease, vice versa. There is negative relationship between price and quantity demanded. It is state that the higher the price, the lower the quantity demanded and the lower the price, the higher quantity demanded. The price influence the quantity demanded.

Figure 1.1: Law of Demand



1.3 Demand Curve

Demand curve is a curve describing the quantities of a good that consumer is able and willing to buy at alternative prices in a given time period.

It illustrates the relationship between both quantities demanded and the price of goods and services as at Figure 1.2

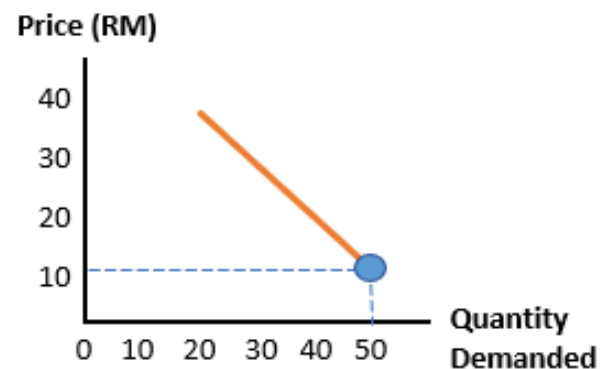
Table 1.1: Demand Schedule

Price (RM)	Quantity Demanded (pieces)
10	50
20	40
30	30
40	20



Negative curve show that the curve is slope downward from higher at the left sight to

Figure 1.2: Demand Curve



It is downward slop from the left to the right. It is showing the negative relationship between price and quantity demanded. The curve is the formulate from the table and plotted point to build the demand curve

1.4 Differences Between Individual demand and market demand curve

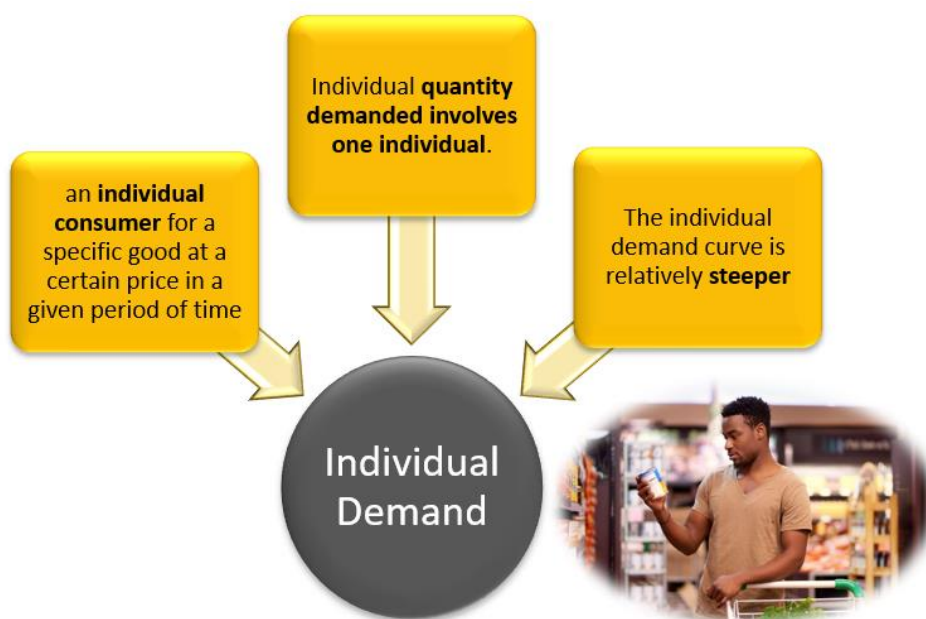




Table 1.2: An Individual and Market Demand Schedule

Price (RM)	Individual (Quantity Demanded)			Market Demand Curve (Total Quantity Demanded)
	X	Y	Z	
5	10	12	8	30
4	20	15	25	60
3	34	30	26	90
2	35	50	35	120
1	40	60	50	150

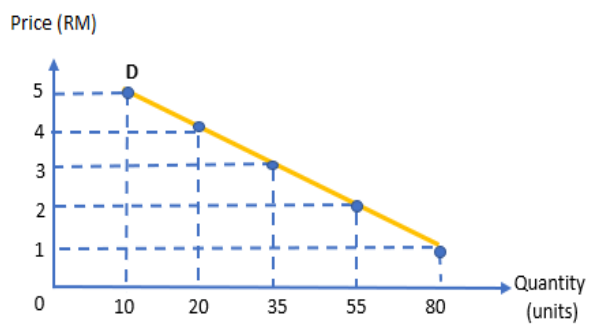


Figure 1.3(a): Individual Demand Curve

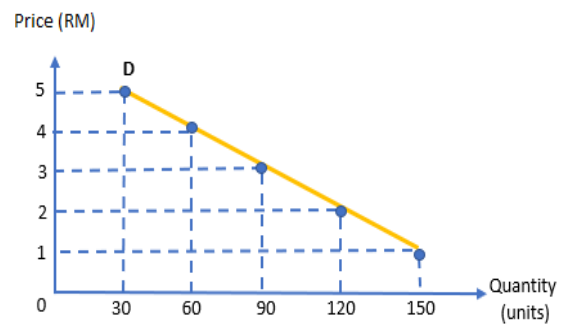


Figure 1.3(b): Market Demand Curve



The market demand quantity is the total quantity offered by a buyer in a market, such as the quantity demanded by buyer X plus the quantity offered by buyer Y and Z.



1.5 Calculate the Demand Function

Demand function is a relationship between both quantity demanded and particular price in a mathematical form shows as below illustration.

$$Qd = a - bP$$

Qd quantity demanded

a the quantity of the demand when the price (P) is zero.

- the negative symbol that indicates the inverse relationship between the price and quantity demanded

b the gradient of the demand curve

P the price of the goods

Example 1:

The table below shows the quantity demand of a good at various prices. Find the **demand function**.

Table 1.3: Demand Schedule (a)

Price (RM)	Quantity Demanded (unit)
1	40
2	36
3	32
4	28

STEP 1

Using simultaneous equation

$$Qd = a - bP$$

$$40 = a - 1b \dots \dots (1)$$

$$36 = a - 2b \dots \dots (2)$$

STEP 2

$$4 = 0 + b$$

$$b = 4$$

Equation (1) – equation (2)

STEP 3

$$40 = a - 1(4)$$

$$40 = a - 4$$

$$40 + 4 = a$$

$$a = 44$$

Substituting $b = 4$
into equation (1)

Write the
demand

STEP 4

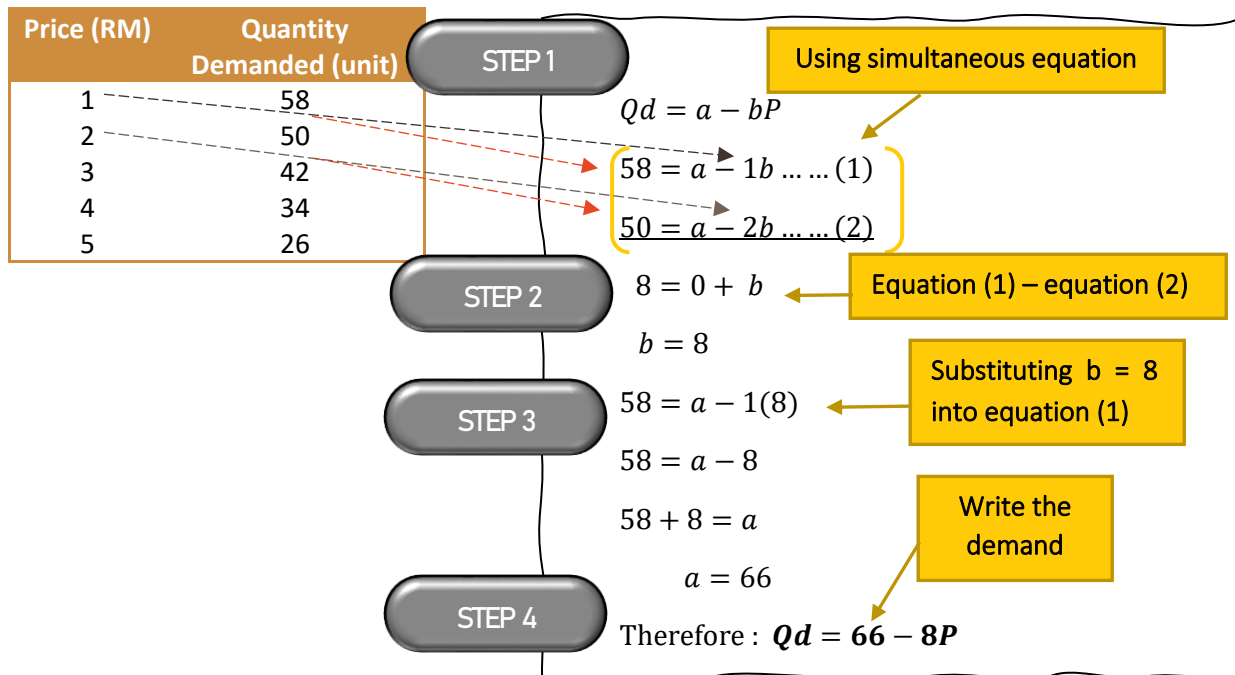
$$\text{Therefore: } Qd = 44 - 4P$$



Example 2:

The table below shows the quantity demand of a good at various prices. Find the **demand function**.

Table 1.4: Demand Schedule (b)



Example 3:

Based on the demand function $Qd = 200 - 10P$, calculate if the price is RM10 and RM15

$$Qd = 200 - 10P$$

Substituting $P = 10$

$$Qd = 200 - 10(10)$$

$$Qd = 200 - 100$$

$$Qd = 100$$

$$Qd = 200 - 10P$$

Substituting $P = 15$

$$Qd = 200 - 10(15)$$

$$Qd = 200 - 150$$

$$Qd = 50$$

INTERNAL FACTOR



Price of Goods

- ✓ Assuming all other factors are equal or ceteris paribus, changes in the price of a good will affect the quantity demanded of the goods.
- ✓ When the price of goods falls, the quantity demanded good will increase.

EXTERNAL FACTOR

INCOME



Society's income

- ✓ The exact effect depends on the type of good (normal good or inferior good).
- ✓ Normal good – when consumer income increases, demand for this kind of good increases. When consumer income decreases, demand for this kind of good decreases. (example; books, cars, shirts, and others).
- ✓ Inferior good - when consumer income increases, demand for this kind of good decreases. When consumer income decreases, demand for this kind of good increases. (example; low-grade rice).



Change in consumer's tastes

- ✓ A favourable change in tastes means that people now like this good more than before, which will increase demand (shift the curve to the right).
- ✓ An unfavourable change means that people now like this good less than before, which will decrease demand (shift the curve to the left).
- ✓ Example: Baju kurung and kurung moden.

Expectations on future price and income

- ✓ In particular, about future prices. If there is a belief that prices will increase in the future, people will buy more today while it is relatively cheaper. This will shift the demand curve to the right.
- ✓ If there is a belief that prices will fall in the future, people will consume less today and more tomorrow. This will shift the demand curve to the left.



Number of buyers

- ✓ If the number of buyers increases, the demand curve will shift to the right.
- ✓ If the number of buyers falls, the demand curve will shift to the left (shift the market demand curve, but not the individual demand curve) to the left.
- ✓ s. When consumer income decreases, demand for this kind of good decreases (example; cars, shirts, books, and others).
- ✓ Inferior good - when consumer income increases, demand for this kind of good decreases. When consumer income decreases, demand for this kind of good increases (example; low-grade rice).



Festive Seasons and Climate / Weather

- ✓ During festive seasons, different products will be in high demand.
- ✓ For example; during Chinese New Year, the demand for mandarin oranges will be greater and during Hari Raya, the demand for lemang will be greater.



Interest Rates



- ✓ When the housing loan interest rate rise, the loan interest rates rise, the cost of taking out a loan will increase.
- ✓ The availability of credit or payment instalment facilities will cause the demand for a good to increase although the price of the good does not change.
- ✓ The low interest rate will encourage increase credit expenditure or loans. For example, the demand for durable and expensive goods such as cars and houses will increase.

Government Policies

- ✓ Government policies can influence demand through taxation or subsidies.
- ✓ When the government increase the taxation rate on imported goods, reduce demand for import good due to increase price and vice versa.
- ✓ When the government subsidizes the production of a good, the demand for good will increase. This is because the price of the goods will decrease due to subsidy and vice versa.



The Price of other Goods

Substitutes Goods

- ✓ Substitutes are goods that can serve as replacements for one another – goods that are consumed as alternatives to one another, such as coffee and Nescafe, apples and oranges, coke and Pepsi, etc.
- ✓ Substitutes are pairs of goods where an increase in the price of one good causes an increase in the demand for the other and a decrease in the price of one good causes a decrease in the demand for the other.
- ✓ Example: When the price of Coke increases, the quantity demanded of Coke will decrease and the demand for Pepsi will increase, ceteris paribus.



Complementary Goods

- ✓ These are goods that are consumed together, such as cars and petrol, camera and film, pen and ink.
- ✓ Complements are pairs of goods where an increase in the price of one causes a decrease in the demand for the other and a decrease in the price of one causes an increase in the demand for the other.
- ✓ Example: When the price of handphone increases, the quantity demanded of the handphone will decrease and the demand for cable charger will decrease, ceteris paribus.

a) Change in quantity demanded or Movement Along Demand Curve.

- ✓ Changes in quantity demanded occur due to any changes in the price of goods or services. When the price of goods increases, quantity demanded will fall and this is known as contraction demand. While when the price falls, the quantity demanded will increase and this is known as the expansion of demand.

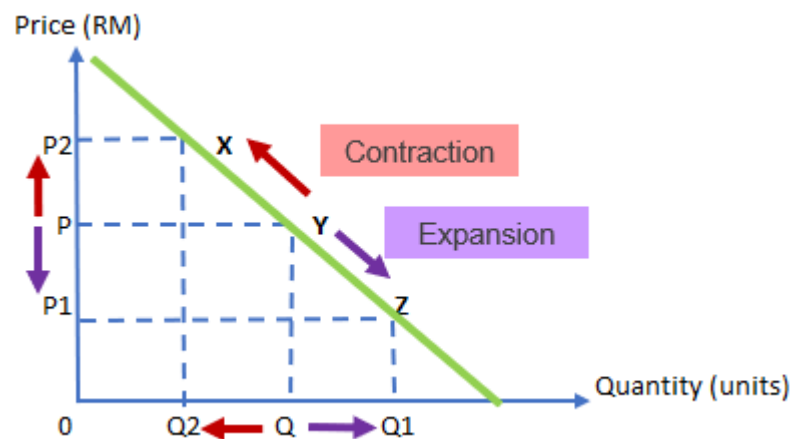


Figure 1.4 : Change in quantity demanded

- ✓ A movement refers to **a change along a curve**. This occurs when the price of product changes and there is movement (please refer to green line) along the demand curve, ceteris paribus. This means the movement occurs when a change in the quantity demanded is caused only by a change in price.
- ✓ From figure 1.4 when price increases from P to P2, the quantity demanded decreases from Q to Q2. However, if the price falls or decrease from P to P1, the quantity demanded will increase from Q to Q1.
- ✓ Therefore, an **upward** movement from point Y to point X on the demand curve (please refer to green line) is known as a **contraction** of demand will decrease in quantity demanded.
- ✓ While a **downward** movement from point Y to point Z is known as **expansion** of demand will increase in quantity demanded.
- ✓ The inverse also known as **negative relationship** between price and quantity demanded is shown by the negative slope of the demand curve.

b) Change in demand or shift in Demand Curve.

- ✓ The **change in demanded** caused by other factors related to it and not because of changed in price of the goods.
- ✓ The demand curve will **shift** to the left when demand decreases or fall and shift to the right when demand increases.
- ✓ When the demand curve shifts to the **right**, it is known as **increased demand**. However, if the demand curve shifts to the **left**, it is known as **reduce demand**.

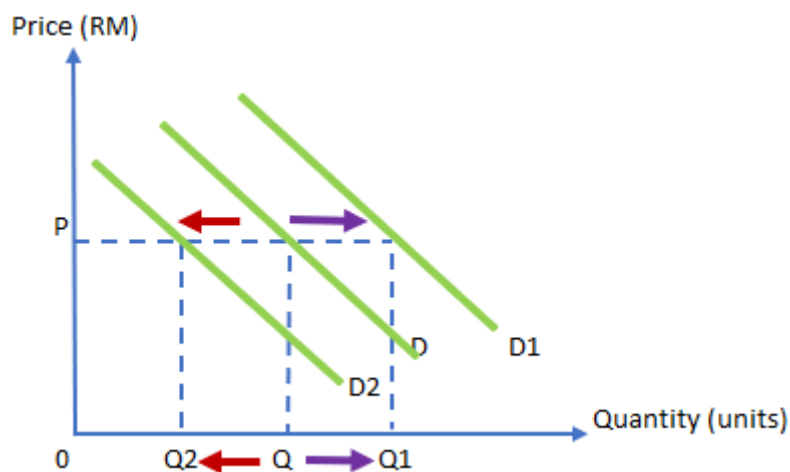


Figure 1.5 : Changes in demand

- ✓ From figure 1.5, curve D is the demand curve for handphone charger. The original price and quantity are P and Q respectively. If the price of handphone falls and ceteris paribus, the quantity demanded of handphone will increase. The increased demand for handphone will cause increases in the demand for handphone charger. Thus the demand curve for handphone charger will shift to the right to D1 (please refer to purple arrow).
- ✓ At the price P, the demand for handphone charger increases to Q1. The movement of the demand curve to the right is known as increased demand.
- ✓ However, if the price of handphone increases and ceteris paribus, the quantity demanded of handphone will fall. The decreased demand for handphone will cause the demand for handphone charger to fall correspondingly. Thus, the demand curve for handphone charger will shift to the left to D2.
- ✓ At the price P, the demand for handphone charger will decrease to Q2. The shift in the demand curve to the left from D2 is known as decreased demand.

1.7 Exceptional Demand Curve

- ✓ Exceptional demand is where as the price of a product increases, the demand for it will also increase (the normal demand curve shows that when price increases, quantity demanded will decrease and when price decreases, the quantity demanded will decrease)

a) Status Symbol Goods

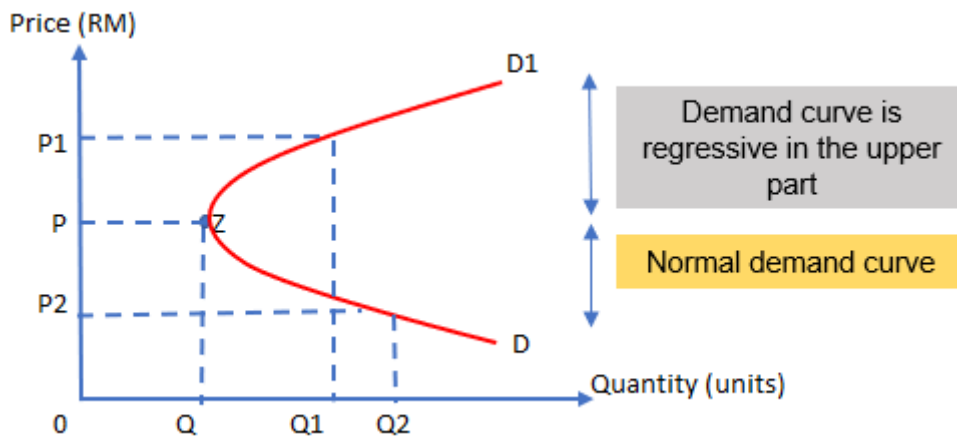


Figure 1.6 (a): Exceptional Demand Curve (Symbol Status Goods)

b) Inferior Goods

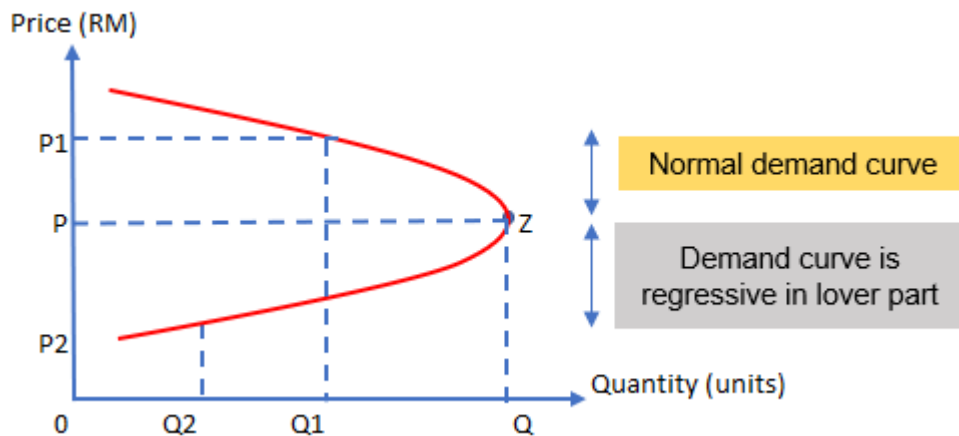
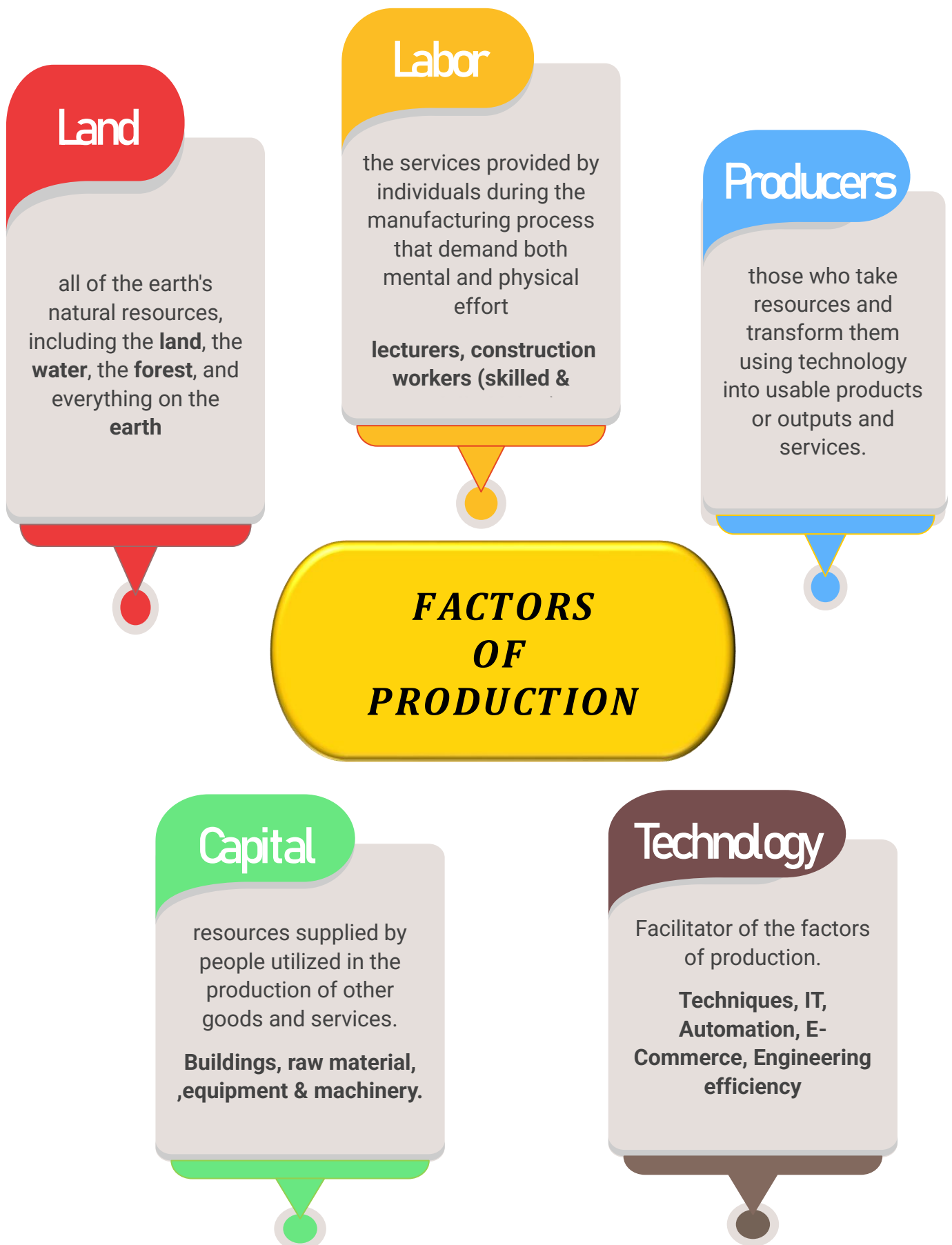


Figure 1.6 (b): Exceptional Demand Curve (Inferior Goods)







DEMAND EXERCISE

A. WORD SEARCH PUZZLE

Find these words.

F	R	E	E	G	O	O	D	S	I	N	G
F	A	S	H	I	O	N	E	F	R	P	I
H	P	M	I	S	T	A	M	E	E	O	F
O	R	O	N	H	G	N	A	I	V	P	F
O	I	T	S	A	H	G	N	D	E	U	E
P	C	H	S	B	E	G	D	E	N	L	N
E	E	D	E	I	E	Y	D	A	U	A	G
I	S	U	B	T	I	T	U	T	E	T	O
N	G	D	J	S	D	H	F	A	R	I	O
C	S	U	P	P	L	Y	F	Q	F	O	D
O	K	L	O	H	F	T	C	W	E	N	S
M	C	O	M	P	L	E	M	E	N	T	D
E	S	G	H	T	H	I	O	G	H	K	A
D	E	M	E	R	G	E	N	C	I	E	S
O	F	G	O	D	D	W	E	I	G	H	T
E	L	A	S	T	I	C	I	T	Y	O	U

DEMAND

SUPPLY

PRICES

FREE GOODS

INCOME

SUBSTITUTE

EMERGENCIES

COMPLEMENT

ELASTICITY

POPULATION

HABITS

REVENUE

GIFFEN GOODS

FASHION

B. SUBSTITUTES GOODS OR COMPLEMENTARY GOODS?

ITEM A	ITEM B	SUBSTITUTES / COMPLEMENTARY
		Substitutes / Complementary
		Substitutes / Complementary
		Substitutes / Complementary
		Substitutes / Complementary
		Substitutes / Complementary
		Substitutes / Complementary
		Substitutes / Complementary

C. STRUCTURE QUESTIONS

- a) Using graph, explain these changes towards demand for fish if:
- Price of fish increase
 - Raining season arrived
 - Consumer prefer to eat chicken
- b) Using graph, explain the effect of the following to equilibrium price and quantity local car producer if
- Government reduces the subsidy of petrol
 - Import tax for car increase

- c) The demand functions of good X are as follows:

$$Qd = 12 - 0.5P$$

Where Qd = Quantity demand X(000 units)

P = Price of X (RM)

- Calculate quantity demand for good X if good X given for free.
- Assume the government fixed the price of good X at RM10.00, calculate quantity demand for good X.
- Because of changes in consumer taste towards good X, the demand function of good X changed to $Qd = 12 - 0.8P$. Draw the demand curve before and after changes in taste happen.
- Calculate the changes in quantity demand when changes in taste happen.

D. MULTIPLE ANSWER QUESTIONS

1. The definition of demand from an economic perspective is _____.
 - A. the desire to purchase goods and services at certain price.
 - B. the desire of all individuals in a market to purchase goods and services at a certain price.
 - C. the ability of an individuals to spend his income to purchase goods and services
 - D. the desire of an individual to obtain goods and services, supported by the ability to pay goods and services at a certain price.

2. Any increase in the quantity demanded of a product due to its price reduction will be shown by _____.
 - A. a shift of the demand curve to the right.
 - B. a shift of demand curve to the left.
 - C. a downward movement along the same demand curve.
 - D. an upward movement along the same demand curve.

3. The law of demand shows the relationship between _____.
 - A. consumer's income and demand.
 - B. population and demand.
 - C. demand and supply.
 - D. price and quantity demand.

4. Which of the following factors cause a shift in a demand curve?
 - A. Consumer's income.
 - B. Producer's goals.
 - C. Level of technology.
 - D. Price of the goods.

5. A rise in quantity demand curves of goods is caused by _____.
A. decreasing price of substitute goods.
B. increasing of individual taxation rates.
C. decreasing prices of complementary goods.
D. decreasing of consumer income.
6. Exceptional demand curve will have a positive slope if _____.
A. the country experiences an economic downturn.
B. it is prestigious goods.
C. the price of the goods is expected to increase in the future.
D. the price of the goods is expected to decrease in the future.
7. A change in quantity demand occurs _____.
A. movement along the demand curve.
B. when the economy is in full employment.
C. when there is a shift to a new demand curve.
D. when there is a change from an agricultural economy to an industrial economy.
8. The law of demand states that other things remaining unchanged, price and _____.
A. sales are positively related.
B. incomes are positively related.
C. quantities demanded are positively related.
D. quantities demanded are inversely related.
9. A rise in quantity demand of goods is caused by _____.
A. increase of individual taxation rates.
B. decrease of consumer income.
C. decrease prices of substitute goods.
D. decrease prices of complementary goods.

10. The 'law of demand' implies the; _____.
- A. as prices rise, demand decreases.
 - B. as prices fall, quantity demanded increases.
 - C. as prices fall, demand increases.
 - D. as prices rise, quantity demanded increases.
11. When the decrease in the price of one item causes the demand for another item to decrease, relation of the items is; _____.
- A. complements
 - B. inferior
 - C. normal
 - D. substitutes
12. As price fall, _____.
- A. demand rises.
 - B. quantity demand falls.
 - C. demand falls.
 - D. quantity demand rises.
13. Goods for which demand is negatively related to income are called _____.
- A. normal
 - B. substitute
 - C. complement
 - D. inferior

14. Movement along the demand curve for high rise apartments will be caused by a change in _____.
- A. price of the single-story link houses.
 - B. consumer's income.
 - C. consumer's taste and preference.
 - D. price of the high-rise apartments.
15. If an increase in the price of paper leads to a decrease in the demand for pencils, then paper and pencils are _____.
- A. substitutes goods.
 - B. complementary goods.
 - C. normal goods.
 - D. inferior goods.

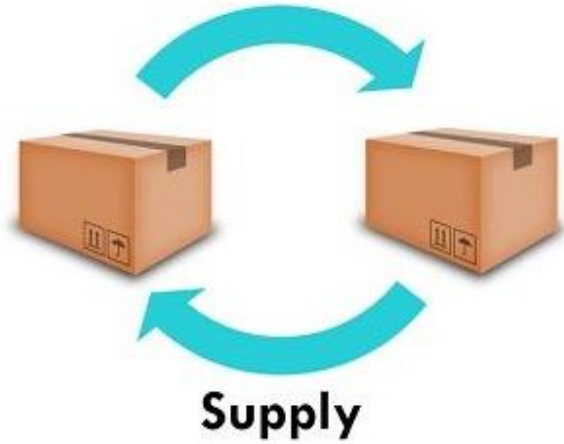
SUPPLY THEORY

2.1 Supply Theory

Supply refers to the volume of goods or commodities that producers are willing and able to sell at certain price in a given time period, *ceteris paribus*.

It represents how many goods that market can offer to the customer.

Quantity supply refers to the amount a producer is willing and able to sell at a given price.



2.2 Law of Supply

According to the **law of supply**, as the price (P) rises, the quantity supply (Q_s) will increase and when the price falls, the quantity supply will decrease.

Therefore, we can notify that a positive relationship between price and quantity while assuming all factors are *ceteris paribus*.

Figure 2.1: Law of Supply

$P \uparrow Q_s \uparrow$ and $P \downarrow Q_s \downarrow$



The supplier are not willing to sell product that falling price because the margin of profit also fall.



2.3 Supply Function

The supply function is defined as the relationship between price and quantity supplied as **mathematical equation**.

$$Q_s = c + dP$$

Q_s

quantity supply

c

the quantity of the supply when the price (P) is zero.

+

the plus symbol that indicates positive relationship P and Q_s

d

the gradient of the supply curve

P

the price of the goods

How to create the supply function:

- Using mathematical equation
- Using Formula; $P - P_1 = [(P_2 - P_1) / (Q_2 - Q_1)] \times (Q - Q_1)$
- Using simultaneous equations





Example 1:

The following table shows the quantity supplied of goods at various price levels.

Table 2.1 : Individual quantity supplied

Price (RM)	Quantity Supplied (kg)
1	25
2	35
3	45
4	55

Solution

a. Using mathematical equation



1

find 'd' value using the formula

2

find 'c' value with substitute 'd' value into equation

3

substitute the value of 'd' and 'c' into equation

1

$$\begin{aligned}d &= \frac{Q_2 - Q_1}{P_2 - P_1} \\&= \frac{35 - 25}{2 - 1} \\&= 10\end{aligned}$$

2

$$\begin{aligned}Q_s &= c + dP \\55 &= c + 10(4) \\55 - 40 &= c \\15 &= c\end{aligned}$$

3

$$\begin{aligned}d &= 10, c = 15 \\ \text{Therefore;} \\ Q_s &= 15 + 10P\end{aligned}$$



Supply function describes as a mathematical equation $Q_s = c + dP$. Students are encouraged to memorize the form of function.



b. Using Formula :

1

identify the formula of supply function



2

insert the value of P and Q into equation

3

simplify the equation

$$P - P_1 = \left[\frac{P_2 - P_1}{Q_2 - Q_1} \right] \times [Q - Q_1]$$

$$P - 1 = \left[\frac{2 - 1}{35 - 25} \right] \times [Q - 25]$$

$$P - 1 = \left[\frac{1}{10} \right] \times [Q - 25]$$

$$10(P - 1) = Q - 25$$

$$25 + 10P - 10 = Q$$

$$\text{Therefore, } Q_s = 15 + 10P$$



c. Using simultaneous equations

1

create two equations from the table given



2

Simplify to get value of 'd' with eliminate value of 'c'

3

Simplify value of 'c' with substitute value of 'd' into any equation

4

substitute the value of 'd' and 'c' into equation



1	2	3	4
$Q_s = c + dP$ $25 = c + 1d \text{ ----- (1)}$ $35 = c + 2d \text{ ----- (2)}$	$25 = c + 1d \text{ ----- (1)}$ $35 = c + 2d \text{ ----- (2)}$ Equation (1) – (2); $- 10 = - 1d$ $d = 10$	Substitute value $d = 10$ into equation (1) $25 = c + 1(10)$ $25 = c + 10$ $c = 25 - 10$ $c = 15$	$d = 10, c = 15$ Therefore; $Q_s = 15 + 10P$

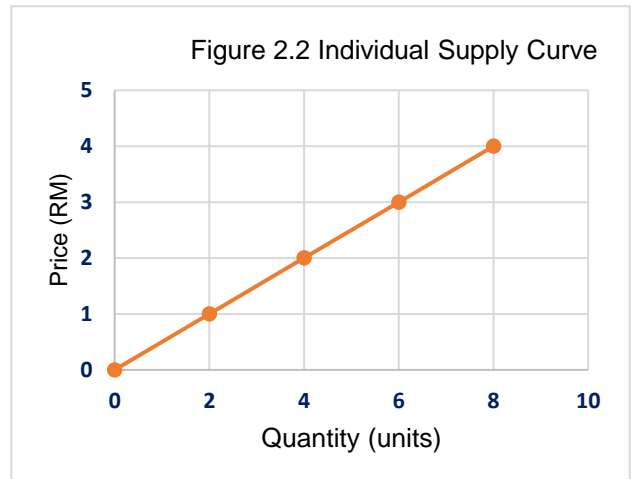
2.4 Individual and Market Supply

Supply curve can be categorised into Individual Supply Curve and Market Supply Curve.

Individual supply refers to a firm's readiness to deliver the market a certain amount of an item or service over a predetermined amount of time.

Price (RM)	Quantity Supplied (kg)
1	2
2	4
3	6
4	8

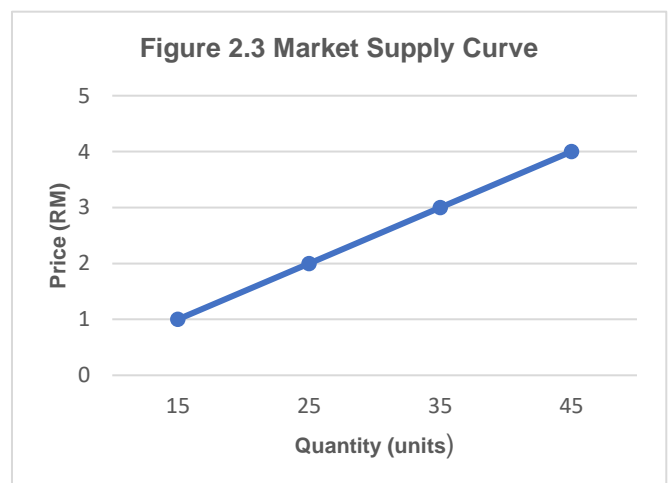
Table 2.2 : Individual Supply Table



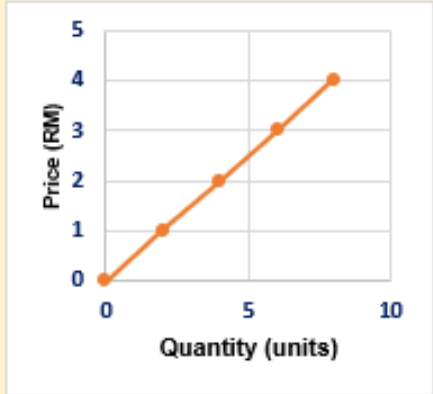
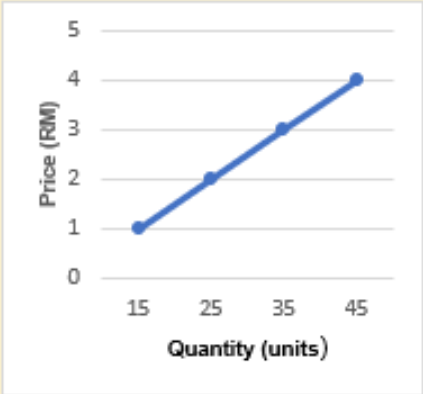
Market supply describes the combined amount of a product or service that all producers in a market are willing to sell. It represents the total of each producer's or seller's supply for a particular product or service.

Price RM)	Supply A	Supply B	Market Supply Quantity (kg)
1	5	10	15
2	10	15	25
3	15	20	35
4	20	25	45

Table 2.3 : Market Supply Table



Difference between the Individual supply curve and market supply curve

BASIS OF DIFFERENCE	INDIVIDUAL SUPPLY	MARKET SUPPLY
Meaning	Refers to the number of goods supplied by a single seller or firm	Refers to the number of goods supplied by all the sellers or firms in the market
Inter-Relationship	Is a component of market supply	Is the aggregation of individual supply
Supply Curve	The individual supply curve is relatively steeper	The market supply curve is relatively flatter
Scope	It has a narrower scope as it is related to the supply of a seller	It has a broader scope as it is related to the supply of all sellers
Represent	It represents a different number of goods supplied by an individual at different prices in the market	It represents a different number of goods supplied by all sellers at different prices in the market
Figure		



The main difference between individual supply and market supply is the number of sellers at a given price in a given period.



2.5 Changes in Supply

The determinants of supply are the factors that affect how much of certain goods and services are available. These factors can be categorized into internal factors and external factors.

An internal factor encompasses the price of goods itself and external factors come from the other goods prices, the firm's technological capabilities, production costs, speculation, number of suppliers, government policies and weather.

INTERNAL FACTOR

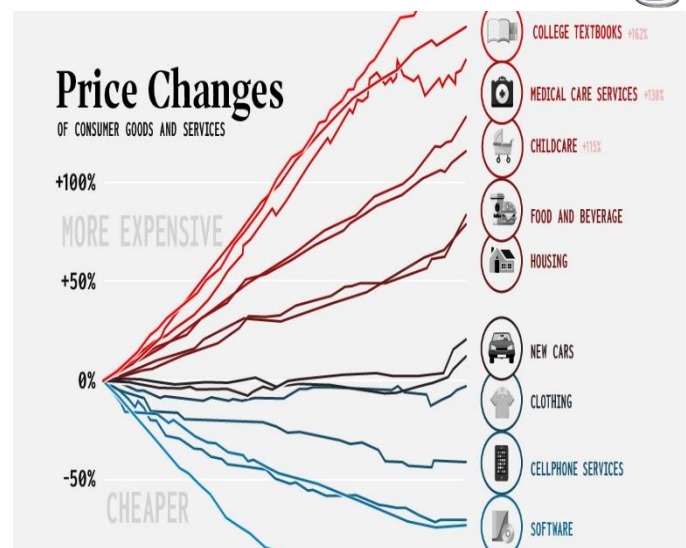
i. Price of goods



Price of goods

- As the price of goods increases, the quantity supplied will also increase, and conversely, as the price of goods decreases, the quantity supplied will decrease.
- For instance : if the cooking oil price rises, the quantity supply will be increased.

What internal factor influences the goods or services supplied?



One of the internal factors of supply has come from the price of the goods themselves.

EXTERNAL FACTOR

What external factor influences the goods or services supplied?



- i. Price of other goods or related goods known as substitute goods and complementary goods.



Price of related goods

a. Substitute goods

- Goods with the ability to substitute the function of another goods.
- For instance : coffee and tea, taxi and Grab car, sugar and milk.
- When the price of goods increase, the price of the substitute goods will become relatively cheaper.

Potatoes Sam's farm



Potatoes Fred's farm



Tea



Coffee



Price of related goods

b. Complementary goods


- Goods are that often used together to perform a specific function.
- For instance : sugar and tea, petrol and cars, pen and inks.
- When the price of goods increase, the price of the complementary goods will also tend to increase.

Main Product

Complementary Products



ii. Levels of Technology




Level of Technology

- Technological development entails advancements in machinery, high-quality raw materials, and increased production efficiency.
- It will increase labour productivity.
This will reduce production costs and increase profitability.
- Supply will increase in response to higher production profitability.

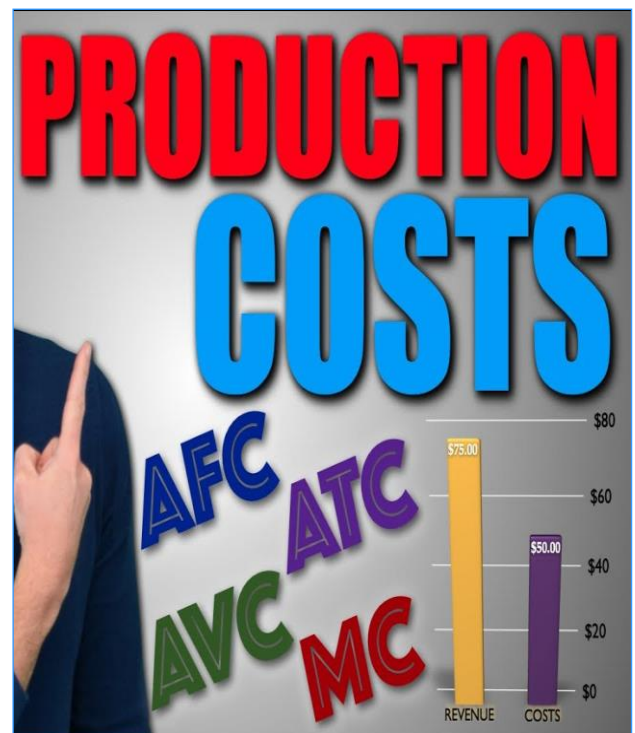


iii. Production costs



Production costs

- The costs that involved in the production of product.
- An increase in the price of resources reduces the profitability of goods and this will reduce the quantity produced.
- Thus, an increase the costs of labour, raw material, capital or others will be reduces the quantity of production.



iv. Number of producers



Number of producers

- The number of producers in an industry will influence supply.
- The more producers or firms in an industry the more supply will be offered and conversely.
- Thus, increasing the number of producers will cause the market supply curve to be shifted to the right.



v. Government Policies



Government Policies

- Government policies such as taxation and subsidies will affect supply.
- If the government imposes taxes on goods, the production costs will be increased then the production will decrease.
- If the government provides subsidies on goods production, the production cost will be decreased then the production will increase.

Key areas for structural reforms



Enhance competitiveness



Transition to higher income nation



Rebuild buffer against future shocks




Alleviate cost of living concerns



Source: Bank Negara

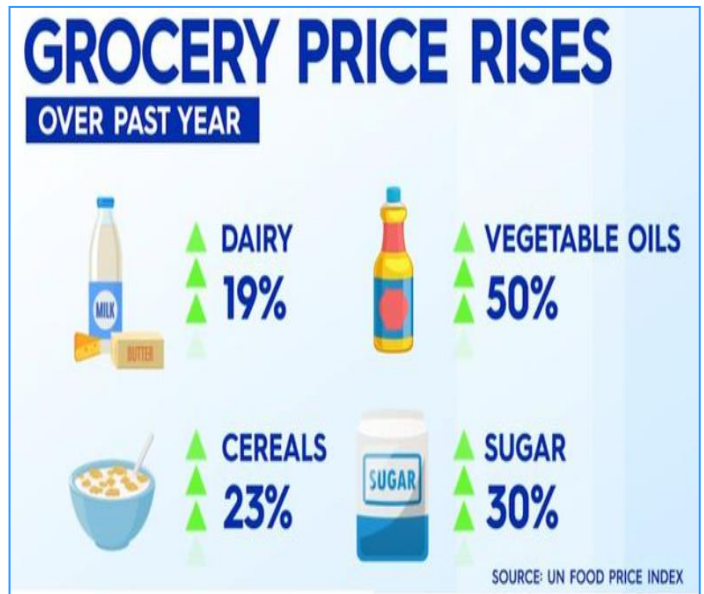
TheStar graphics

vi. Speculations




Speculation

- Producers' expectations about the price of goods will affect supply.
- If producer speculates that prices will rise, they will reduce the current supply and conversely.




vii. Weather



Weather

- Weather conditions will affect the supply of goods from certain industries such as agriculture and fishing.
- For instance: storms, floods and winds.



 External factors of supply have come from the related goods price, technologies, production cost, government policies, numbers of producer, weather.

Let us see how these factors affect the supply curve.

- ✓ A supply curve illustrates how variations in supply might impact movement along the demand curve. In this case, as well as how other relevant factors may lead the supply curve to slant to the left or right, assuming *ceteris paribus*.

a) Movement Along the Supply Curve

- ✓ A supply curve shows how the quantity supplied will change as the price increases and declines, assuming, *ceteris paribus* that no other economically significant factors change.
- ✓ If the price of a good increase, the quantity supplied increases, this is called an expansion of supply. However, if the price of the goods falls, the quantity supplied will fall, this is called a contraction of supply.
- ✓ Therefore, changes in the quantity of goods supplied or movement along a supply curve, are exactly refer to the price of the goods themselves.

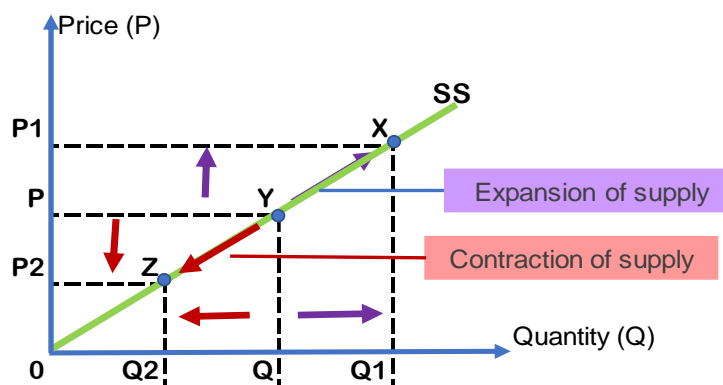


Figure 2.4 Changes in quantity supply

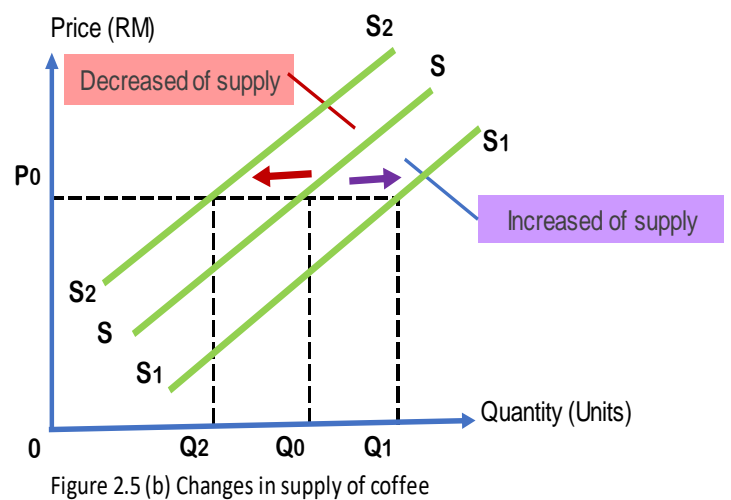
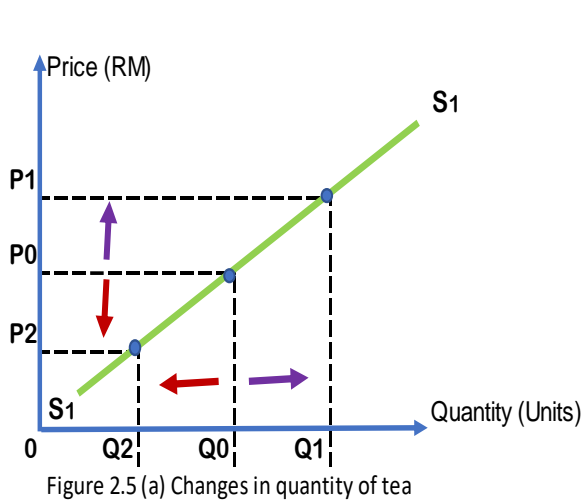
- ✓ According to Figure 2.4, If the price rises from P to P_1 , the quantity supplied will increase from Q to Q_1 . But, if the price decrease from P to P_2 , the quantity supplied will fall from Q to Q_2 . As the result, the movement from point Y to point X along the supply curve SS is called an expansion of supply, whereas the movement from point Y to point Z along the supply curve SS is known as contraction of supply.



The price of the product itself drives the movement along the supply curve since the amount provided has changed.

b) Shift in The Supply Curve

- ✓ The supply curve will shift to the right when there is an increase in supply and the supply curve will shift to the left when there is a decrease in supply. In other words, a rightward shift in the supply curve is an increase in supply. On the other hand, a shift in the supply curve to the left is known as a fall in supply.
- ✓ Figure 2.5 (a) shows the tea supply curve, S_1S_1 while figure 2.5 (b) shows the changes in coffee supply. When the price of tea falls, the supply of tea will decrease from Q_1 to Q_2 while the supply of coffee will increase from Q_0 to Q_1 , because tea and coffee are substitutes. At price level P_0 , the supply curve for coffee shifts to the right from S_0S_0 to S_1S_1 known as increased supply.



However, when the price of tea increases, the quantity supply of tea will increase correspondingly. The increased supply of tea will result in a decreased supply of coffee. At price P_0 , the supply curve for coffee will shift to the left from SS to S_2S_2 . Thus, the supply of coffee will decrease from Q_0 to Q_2 . The shift in the supply curve for coffee from SS to S_2S_2 is known as decreased supply.



If there is a change in the other supply-relevant elements, there will be a shift in supply, which will cause the entire supply curve to move to the right or left.

2.6 Exceptional Supply Curve



The exceptional supply curve shows when its form is contrary with the law of supply

- A situation of exceptional supply occurs when the price of goods increases, and the quantity supply will decrease.
- It can be caused by price speculation by producers. For instance, the relationship between wages and labor supply.

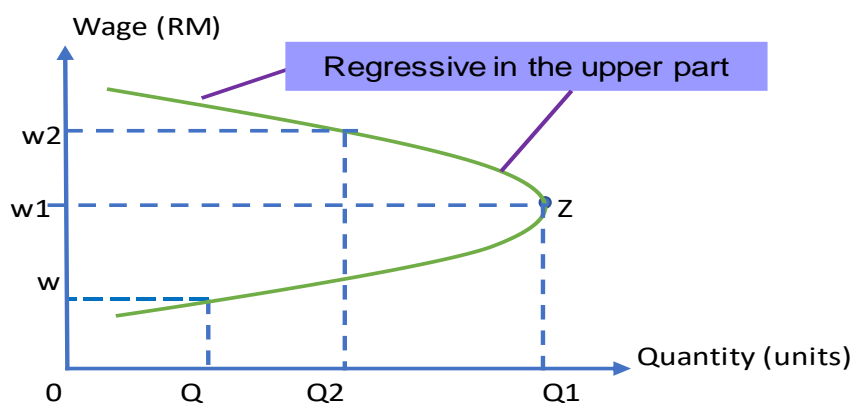


Figure 2.5.3 Exceptional supply curve: relationship between wages and supply of labour

Figure 2.6 shows the relationship between wages and labour supply; the result is regressive in the upper part of the supply curve.

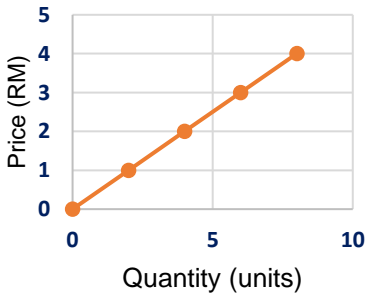
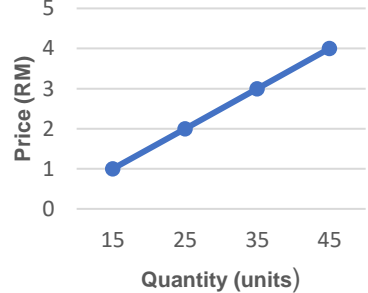
- At wage level $0W$, labourers are willing to supply $0Q$ working hours.
- At wage level $0W_1$, it shows the increases of wages from $0W$ to $0W_1$ and the increases in working hours to $0Q_1$.
- However, if the wages increase further to $0W_2$, the laborers may become unwilling to work long hours more the $0Q_2$. Therefore, the supply curve will bend backward or will be regressive (at point Z) in the upper part.



The entire supply curve will move to the right or left if there is a shift in supply, which is defined as changes in the quantity delivered at each price as a result of other supply-related



2.9 Summary

BASIS OF SUPPLY	INDIVIDUAL SUPPLY	MARKET SUPPLY																						
1. Definition	a single seller or firm	all the sellers or firms in the market																						
2. Inter-Relationship	component of market supply	aggregation of individual supply																						
3. Supply Curve	relatively steeper	relatively flatter																						
4. Scope	narrower scope	broader scope																						
5. Represent	by an individual at different prices in the market	by all sellers at different prices in the market																						
6. Figure	<div>Figure 2.4.1 Supply Curve</div>  <table><thead><tr><th>Quantity (units)</th><th>Price (RM)</th></tr></thead><tbody><tr><td>0</td><td>0</td></tr><tr><td>2</td><td>1</td></tr><tr><td>4</td><td>2</td></tr><tr><td>6</td><td>3</td></tr><tr><td>8</td><td>4</td></tr></tbody></table>	Quantity (units)	Price (RM)	0	0	2	1	4	2	6	3	8	4	<div>Figure 2.4.2 Market Supply Curve</div>  <table><thead><tr><th>Quantity (units)</th><th>Price (RM)</th></tr></thead><tbody><tr><td>15</td><td>1</td></tr><tr><td>25</td><td>2</td></tr><tr><td>35</td><td>3</td></tr><tr><td>45</td><td>4</td></tr></tbody></table>	Quantity (units)	Price (RM)	15	1	25	2	35	3	45	4
Quantity (units)	Price (RM)																							
0	0																							
2	1																							
4	2																							
6	3																							
8	4																							
Quantity (units)	Price (RM)																							
15	1																							
25	2																							
35	3																							
45	4																							



SUPPLY EXERCISE

A. TRUE OR FALSE?

1. The price of garlic could be a nonprice determinant of the demand of onions.
2. Salt and pepper are substitute goods.
3. A downward movement along the curve shown the changes the price of demand or supply.
4. The price of goods will increase if both demand and supply increases.
5. Income elasticity of demand for iPhone 14 is 1.4. This shows that the iPhone 14 is a luxury goods.
6. Supply curve shows the same direction as the demand curve.
7. At equilibrium, the quantity demanded equals the quantity supplied.
8. A surplus occurs when quantity demanded exceeds the quantity supplied.
9. A price increases will shift the supply curve to the left.
10. Available technology for making rugs can be the nonprice determinant of supply of handmade rugs.

B. STRUCTURE QUESTIONS

a) Based on Demand Structure Question Exercise c) ii.

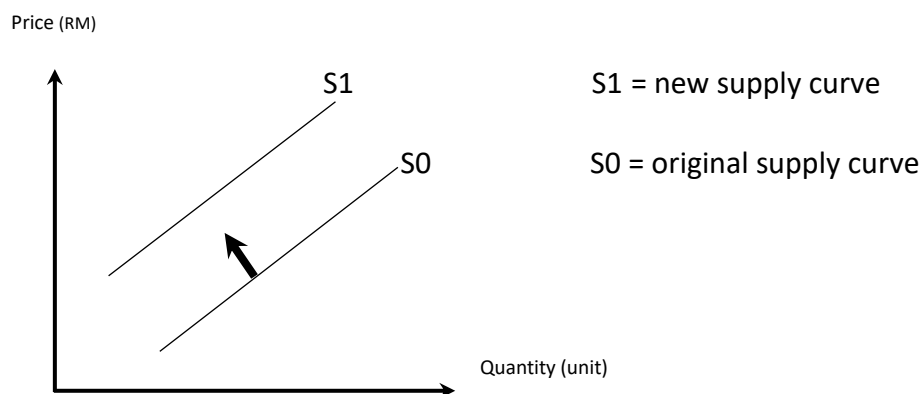
If quantities supplied of good X are 6000 units, specify what happens at the market?

b) Based on Demand Structure Question Exercise c) iv.

- i. What happens for the market if supplied unchanged?
- ii. Calculate total revenue when changes in taste happen.

C. MULTIPLE ANSWER QUESTIONS

- Any decreases in the supply quantity of a product due to its price reduction will be shown by _____.
 - an upward movement along the supply curve.
 - a downward movement along the supply curve.
 - a shift of the supply curve to the left.
 - a shift of the supply curve to the right.
- Which of the following situations will NOT cause the supply curve for goods to shift because of changes in?
 - technology.
 - taxation structure.
 - the price of the goods itself.
 - the price for factors of production.
- The shift in the supply curve from S0 to S1 shows; _____.



- an increasing in the supply.
- a decrease in supply.
- an expansion movement in supply.
- a contraction movement in supply.

4. A movement along supply a supply curve can be influenced by _____.
- A. price of the goods.
 - B. level of technology.
 - C. production costs.
 - D. speculation.
5. Which of the following is consistent with the law of supply?
- A. As the price of smartphones falls, the supply of smartphones increases, *ceteris paribus*.
 - B. As the price of smartphone rise, the quantity supplied of smartphones increases, *ceteris paribus*.
 - C. As the price of smartphones rise, the supply of smartphones increases, *ceteris paribus*.
 - D. As the price of smartphones rise, the quantity supplied of smartphones decreases, *ceteris paribus*.
6. According to the law of supply, _____.
- A. It describes the demand curve shift.
 - B. It describes the negative relationship between price and quantity supply.
 - C. It describes the positive relationship between price and quantity supply.
 - D. It describes the price changes effect from quantity supply changes.
7. Which of the following can lead to an increase in the supply for good Z?
- A. A fall in the number of supplier of goods Z
 - B. A rise in the price of inputs used to make goods Z.
 - C. A fall in consumer's income, assuming goods Z is a normal.
 - D. An advancement in manufacturing technique used in production of goods Z

8. A shift to either the left or right of the supply curve is called _____.
- A. a change in quantity demanded.
 - B. a change in supply.
 - C. a change in demand.
 - D. a change in quantity supplied.
9. The law of supply indicates that _____.
- A. decrease the supply of a good when its price falls.
 - B. increase the supply of a good when its price rises.
 - C. increases the quantity supplied of a good when its price rises.
 - D. decreases the quantity supplied of a good when input prices fall.
10. All of the following are held to be constant when the supply curve for a product is drawn, EXCEPT _____.
- A. the price of the product.
 - B. the state of the technology.
 - C. the number of the producers.
 - D. The price of inputs used to make the product.
11. Sellers would offer _____ for sale as price decrease, and therefore, the supply curve is _____ sloping.
- A. more; upward
 - B. more; downward
 - C. less; upward
 - D. less; downward
12. Which of the following could not cause an increase in the supply of wheat?
- A. A decrease in the price of wheat.
 - B. A decrease in the price of corn.
 - C. A decrease in the price of machinery and equipment used in wheat farming.
 - D. Improvements in the techniques of growing wheat.

10. The supply of Tesla cars will increase if _____.
- A. the demand for Tesla cars decreases.
 - B. the government reduces taxes on Tesla cars.
 - C. the price of Tesla cars falls.
 - D. Variations in the cost of manufacturing inputs.
11. The law of supply states that there exists a/an _____ relationship between price and quantity supply.
- A. elastic
 - B. infinity
 - C. positive
 - D. negative
12. According to the law of supply, an increase in the price of a good; _____.
- A. decreases the demand for those goods.
 - B. increases the supply of that goods.
 - C. decreases the quantity demanded for those goods.
 - D. increases the quantity supplied of those goods.

A. WORD SEARCH PUZZLE

F	R	E	E	G	O	O	D	S	I	N	G
F	A	S	H	I	O	N	E	F	R	P	I
H	P	M	I	S	T	A	M	E	E	O	F
O	R	O	N	H	G	N	A	I	V	P	F
O	I	T	S	A	H	G	N	D	E	U	E
P	C	H	S	B	E	G	D	E	N	L	N
E	E	D	E	I	E	Y	D	A	U	A	G
I	S	U	B	T	I	T	U	T	E	T	O
N	G	D	J	S	D	H	F	A	R	I	O
C	S	U	P	P	L	Y	F	Q	F	O	D
O	K	L	O	H	F	T	C	W	E	N	S
M	C	O	M	P	L	E	M	E	N	T	D
E	S	G	H	T	H	I	O	G	H	K	A
D	E	M	E	R	G	E	N	C	I	E	S
O	F	G	O	D	D	W	E	I	G	H	T
E	L	A	S	T	I	C	I	T	Y	O	U

B. SUBSTITUTES GOODS OR COMPLEMENTARY GOODS?

1. COMPLEMENTARY
2. SUBSTITUTES
3. COMPLEMENTARY
4. COMPLEMENTARY
5. SUBSTITUTES
6. SUBSTITUTES
7. SUBSTITUTES

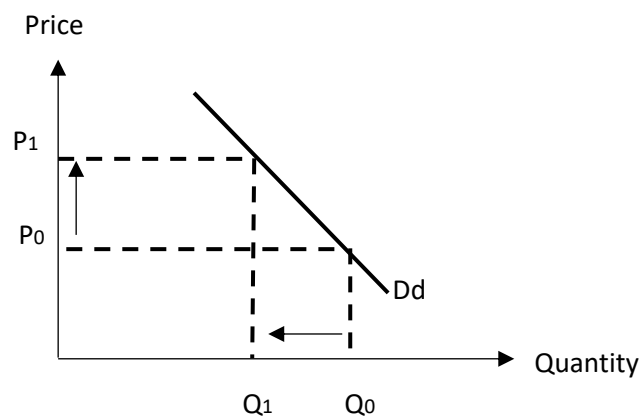
C. STRUCTURE QUESTION

a) Using graph, changes towards demand for fish if:

i. **Price of fish increase**

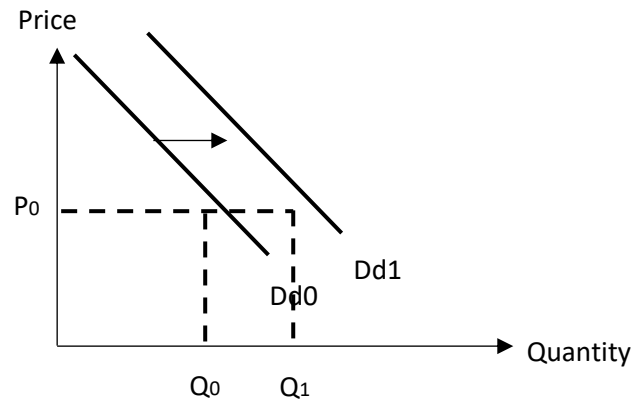
Quantity demanded for fish has a reverse relationship with the price of fish.

Increase in price of fish will cause quantity demanded for fish to be reduced.



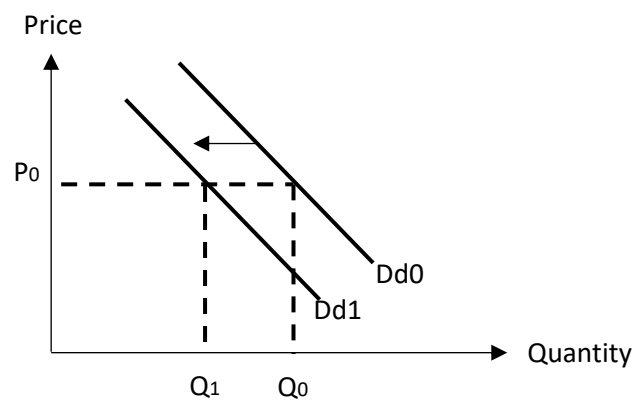
Based on the graph, DD is the demand curve for fish. At price P_0 quantity demand for fish is Q_0 . When the price of fish increases from P_0 to P_1 cause quantity demand for fish will reduce from Q_0 to Q_1 .

ii. **Raining season arrived**



From the graph, Dd_0 is the original demand curve. Demand for fish will increase during the rainy season. Demand curve will shift to the right from Dd_0 to Dd_1 . At the level of price, quantity demand for fish will increase from Q_0 to Q_1 .

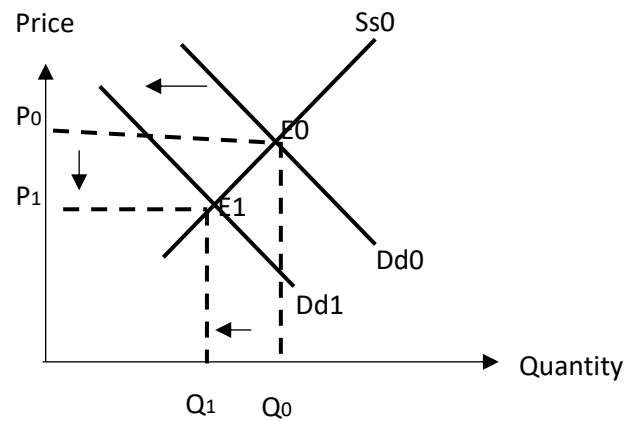
iii. **Consumer prefer to eat chicken**



Changes in consumer preference to eat chicken will cause demand for fish will reduce. It will shift to the left from Dd_0 to Dd_1 . At the same level of price, quantity demand will reduce from Q_0 to Q_1 .

b) Using graph, the effect of the following to equilibrium price and quantity local car producer if

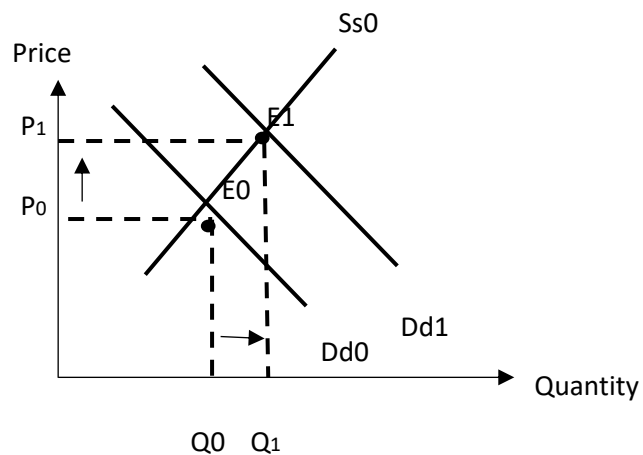
i. **Government reduces the subsidy of petrol**



Based on the graph, the equilibrium point is at E0 intersecting demand curve Dd0 and Ss0 at price equilibrium P0 and quantity equilibrium Q0.

Government action to reduce the subsidy of petrol will cause the price of petrol will increase thus reducing demand for petrol also reduces. Petrol is complementary for local car. Reducing quantity demand for petrol will affect quantity demand for cars. This will shift the demand curve for local cars to the left from Dd0 to Dd1. At the new equilibrium point E1, the price will reduce from P0 to P1, and quantity reduces from Q0 to Q1.

ii. Import tax for car increase



Based on the graph, the equilibrium point is at E0 intersecting demand curve Dd0 and Ss0 at price equilibrium P0 and quantity equilibrium Q0.

When the import tax for cars increases will cause the price of imported cars will increase thus will reduce demand for imported cars. Reducing quantity demand for imported cars will affect quantity demand for local cars to increase. This will shift the demand curve for local cars to the right from Dd0 to Dd1. At the new equilibrium point E1, the price will increase from P0 to P1, and quantity will increase from Q0 to Q1.

c) The demand functions of good X are as follows:

$$Q_d = 12 - 0.5P$$

Where Q_d = Quantity demand X (000 units)

P = Price of X (RM)

i. $Q_d = 12 - 0.5P$

$$Q_d = 12 - 0.5(0)$$

$$Q_d = 12\ 000\ \text{units}$$

ii. $P = 10$

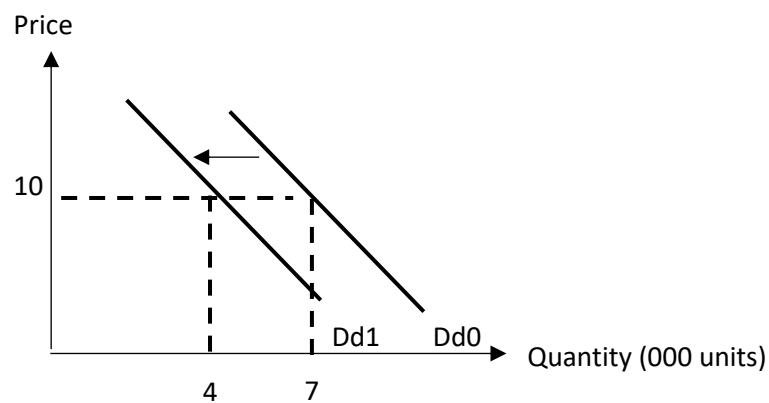
$$Q_d = 12 - 0.5(10)$$

$$= 12 - 5$$

$$= 7\ 000\ \text{units}$$

iii. $Q_d = 12 - 0.8P$.

i. Changes in taste happen.



ii. $Q_d = 12 - 0.8P$

$$= 12 - 0.8(10)$$

$$= 4\ 000\ \text{units}$$

The new quantity demanded is 4000 units. So that change of quantity demand is 3000 units (7000 – 4000).

D.MULTIPLE ANSWER – DEMAND THEORY

1. D
2. C
3. B
4. D
5. A
6. B
7. A
8. B
9. A
10. D
11. A
12. D
13. C
14. D
15. B

A. TRUE OR FALSE

1. TRUE
2. FALSE
3. TRUE
4. TRUE
5. TRUE
6. FALSE
7. TRUE
8. FALSE
9. TRUE
10. TRUE

B. STRUCTURE QUESTION

a) Based on Demand Structure Question Exercise c) ii.

If $Q_s = 6000$ units and $Q_d = 7000$ units.

So, there are excess in demand 1000 units.

b) Based on Demand Structure Question Exercise c) iv.

i. $Q_s = 6000$ units

If Q_s unchanged, there are excess in supply 2000 units when $Q_d = 4000$ units. ($6000 - 4000$).

ii. Total revenue

$$\begin{aligned}\text{TR} &= P \times Q \\ &= 10 \times 4000 \\ &= \text{RM } 40\,000\end{aligned}$$

C. MULTIPLE ANSWER QUESTIONS – SUPPLY THEORY

1. C
2. C
3. B
4. A
5. B
6. C
7. D
8. B
9. C
10. A
11. D
12. A
13. B
14. C
15. D

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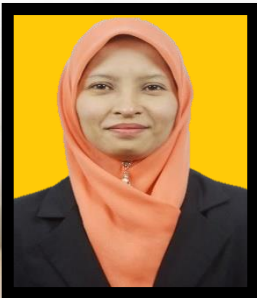
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