KILMARTIN
EDUCATIONAL SERVICES

Economics Course 1

Microeconomics

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Fundamentals of Economics

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The fundamental problem in economics is unlimited wants versus limited resources.

1. Households: Finite income is distributed across consumption of a basket of products to maximise utility
2. Firms: Firms must deploy limited resources such as costs and access to credit (capital) to maximise profits
3. Government: Finite income from taxation and other income, to meet their objectives or electoral mandate

The fundamental economic problem is one of 'scarcity'. Explain this concept.

_____

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(16 marks)

This forces economic agents to make choices. Related to the concept of **opportunity cost**.

1. Outline why 'choice' is fundamental to the study of economics.

_____

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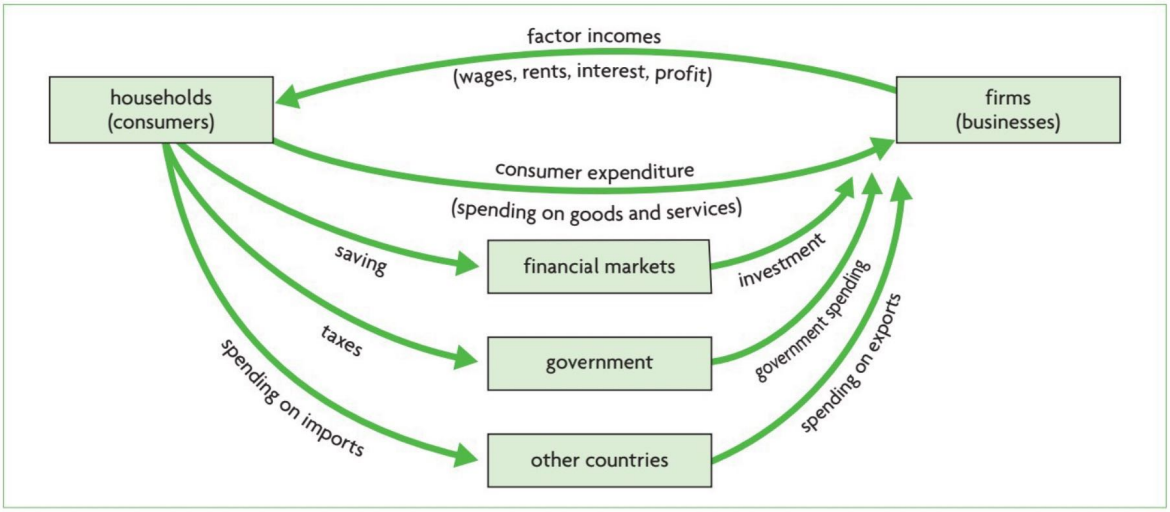
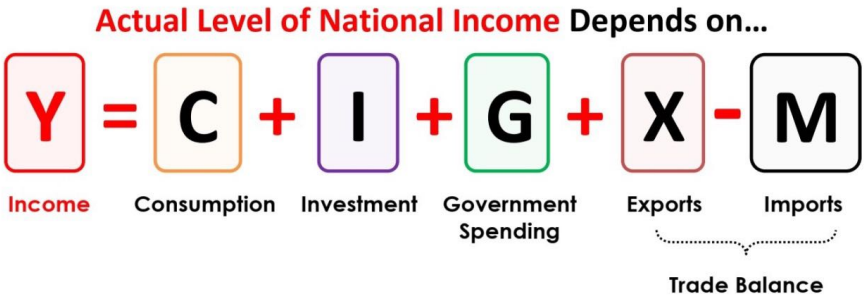
(16 marks)

This is microeconomics but I believe that using the circular flow of income for an open economy assists understanding where each piece of the jigsaw fits.





1 Households

Households exchange Factors of Production for income, which as finite, they are as economic agents, forced with finite resources to make choices. Economists assume such agents obey the following assumptions.

For analytical purposes economists make certain assumptions about consumer behaviour.
State and explain **FOUR** principal assumptions.

(15 marks)

These assumptions are at the heart of controversy in economics. Rational behaviour is difficult to reconcile with the endless financial booms and busts that societies for recorded history, have experienced.
There are two slippery concepts at work:

1.1 Law of Diminishing Marginal Utility

The Law of Demand is a consequence of the Law of Diminishing Marginal Utility that states that an individual's satisfaction, called Utility will increase from a starting point called the origin but as each additinal unit is consumed, the utility gained for each additional unit consumed will reach a peak and then start to decline. In addition, this Law also interacts with the Law of Equimarginal Consumer Behaviour, that states as a basket of goods are consumed, the quantities consumed of each obey

$$\frac{MU_1}{P_1} = \frac{MU_2}{P_2} = ... = \frac{MU_n}{P_n}$$

So if price of a good in a basket falls, consumer has to rebalance by buying more of that good. What are the assumptions underlying each?

1. **(a)** Explain the economic concept of the Equi-Marginal Principle of consumer behaviour.

_____

_____

_____

_____

(b) In equilibrium, a consumer buys 6 apples at €0.90 each and 7 oranges at €0.50 each.

The marginal utility of the 6th apple is 9 utils.

Calculate the marginal utility of the 7th orange.
(Show your workings.)

Workings:

Answer:

(16 marks)

And reverting to the first concept:

(a) State the **Law of Diminishing Marginal Utility**:_____

_____

_____

(b) The table below illustrates the Law of Diminishing Marginal Utility.

Number of units consumed	**1**	**2**	**3**	**4**	**5**	**6**
Total Utility in units	**30**	**65**	**85**	**100**	**110**	**115**
Marginal Utility in units	**30**					

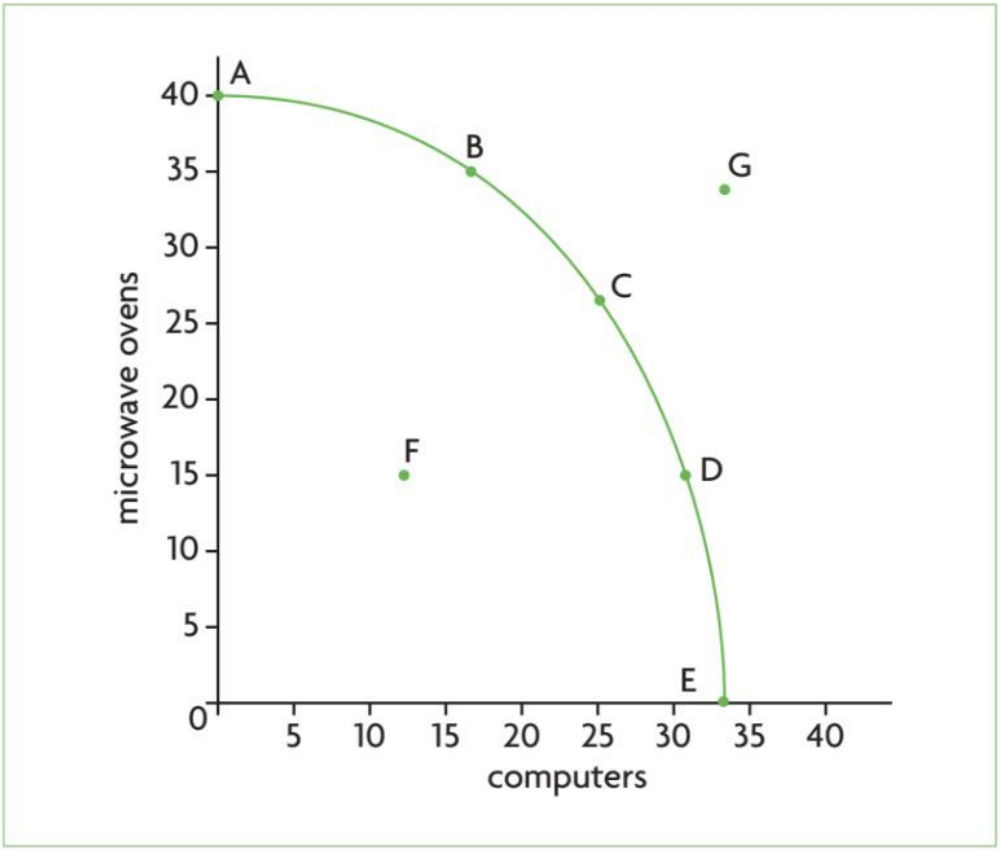
Complete the table and state the point after which diminishing utility sets in.

_____

(17 marks)

2 Government and Firms

This is the connection between Micro and Macro: Government and Firms. Firms want to maximise profits whereas Government, in the Developed Democracies, wish to enhance economic development. Arguabably, firms can maximise profits, deploying resources inefficienctly, which costs the economy an opportunity cost. Government in theory, wishes all resources in the economy, deployed most efficiently.



The **production possibilities curve (or frontier)** represents all combinations of the maximum amounts of two goods that can be produced by an economy, given its resources and technology, when there is full employment of resources and productive efficiency. All points on the curve known as **production possibilities**.

This explains the tension between Government and Firms, Firms and Labour, Government and Labour.

1. (a) In the case of any **two** of the following distinguish between the concepts.

(i) The Law of Demand *and* the Law of Supply.

(ii) Consumer Surplus *and* Producer Surplus.

(iii) Derived Demand *and* Joint Demand.

[25]

(b) Assume the market for electric cars is in equilibrium. Describe with the aid of a **separate** diagram in **each** case the effects each of the following market situations is likely to have on the equilibrium position for electric cars.

(i) A technological advance in the production process of electric cars.

(ii) The motor tax on petrol engine cars is expected to rise in the near future.

(iii) The government increases subsidies on public transport, reducing prices for its commuters.

[30]

(c) *The average monthly rental price for private residential property in Ireland is €1,078.*

(**Source:** *Daft.ie 2016*)

(i) Assume the average monthly **equilibrium** rental price is €1,078. On one diagram, illustrate the effect on the market if the Irish Government introduced a rent control that sets the maximum rent at €715.

(ii) Discuss the likely economic consequences of such a rent control (i.e. price ceiling on rental costs) on the Irish rental property market.

[20]

[75 marks]

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a)

The Law of Demand states that as prices rise the quantity demanded will fall and vice versa, ceteris paribus (all other things being equal). We illustrate the law of demand using a downward-sloping line from left to right. There is an inverse or negative relationship between the price of a good and the quantity demanded of that good.

The Law of Supply states that as prices rise the quantity supplied will rise and vice versa ceteris paribus (all other things being equal). We illustrate the law of supply using an upward-sloping line from left to right. There is a positive relationship between the price of a good and the quantity supplied of that good.

Consumer Surplus is the difference between what a consumer actually pays for a good and the maximum s/he was willing to pay for the good rather than do without it. The utility gained from a good or service in excess of the amount paid for it.

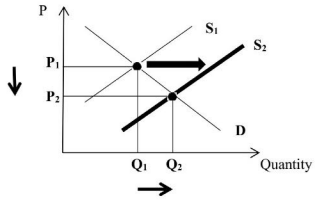
Producer Surplus is the difference between what a producer receives for a good and the minimum s/he was willing to accept for the good. The extra earnings obtained by the producer above the minimum required for them to supply the good or service.

Derived Demand is where a factor of production is not demanded for its own sake but rather for its contribution to the production process.

Joint Demand is where two (or more) goods are used in conjunction with each other in order to achieve utility. They are complementary goods, for example, golf clubs and golf balls.

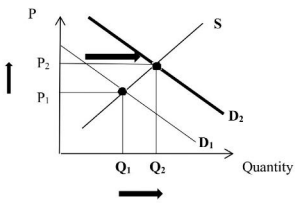
b)

(i) A technological advance in the production process of electric cars.



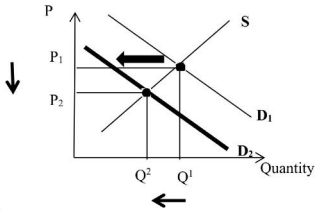
- S/C shifts to the right (S_2)
- The technological advance will lead to an increase in the supply of electric cars due to increased efficiency/lower unit production costs
- There will be a surplus of electric cars at price P_1. This surplus will cause the price to fall to P_2.
- New **lower** equilibrium price – P_2
- New **higher** equilibrium quantity – Q_2

(ii) The motor tax on petrol engine cars is expected to rise in the near future.



- D/C shifts to the right (D_2)
- The demand for electric cars will increase as a substitute good has now become more expensive.
- This increase in demand will result in an excess demand or a shortage which will drive price up to P_2.
- New **higher** equilibrium price – P_2
- New **higher** equilibrium quantity – Q_2

(iii) The government increases subsidies on public transport, reducing prices for its commuters.



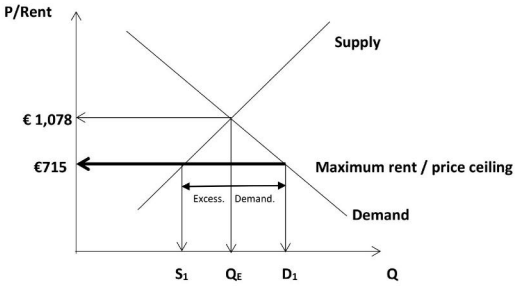
- D/C shifts to the left (D_2)
- The demand for electric cars will decrease as a substitute service has now become more affordable / cheaper.
- This decrease in demand will result in an excess supply which will drive price down to P_2.
- New **lower** equilibrium price – P_2
- New **lower** equilibrium quantity - Q_2

c)

(c) *The average monthly rental price for private residential property in Ireland is €1,078.* [20]

(**Source:** *Daft.ie 2016*)

(i) Assume the average monthly **equilibrium** rental price is €1,078. On one diagram, illustrate the effect on the market if the Irish Government introduced a rent control that sets the maximum rent at €715.



(Excess demand: D_1 minus S_1)

(ii) Discuss the likely economic consequences of such a rent control (i.e. price ceiling on rental costs) on the Irish rental property market.

Possible responses include

Effect on demand
The rent price would decrease to €715 and the quantity demanded would increase as more people can now afford to rent. The impact of the price ceiling/rent control is a shortage or **excess demand** at this new price level.

Effect on consumers
Rent controls can reduce exploitation of consumers, especially where there is a lack of competition. They can help people on low incomes to afford rental housing. It will allow those on lower incomes to have an improved standard of living. If landlords do not invest in their properties then consumers may have to settle for poor quality accommodation.

Effect on landlords
The quantity supplied of rental property will fall if developers / landlords consider the rental return to be too low. Some landlords may decide to sell their properties or withdraw from the market. Some landlords will have less income to invest and maintain their property, resulting in a deterioration in the quality of properties.

Allocation of available supply
Problems arise over how to allocate supply to meet the excess demand in the market, since price cannot increase. This could involve a 'first-come, first-served' basis or 'seller's preference', both of which are deemed to be unfair. Landlords may require large deposits from new tenants.

Difficulties for government / black market
It will be difficult for the government to monitor and enforce price controls in markets. There is a danger of a shadow market/black market being created.

2011 **1.** **(a)** (i) Define the economic terms: **individual (consumer) demand; market demand.**

(ii) Explain, with the aid of labelled diagrams, the relationship between individual (consumer) demand and market demand. *(20)*

(b) (i) Distinguish between the economic meanings of a 'movement along a demand curve' and a 'shift in a demand curve' for concert tickets.
Illustrate your answer using diagrams.

(ii) State and explain **two** factors that would cause a shift in a demand curve for concert tickets. In **each** case explain how the factor affects the demand curve. *(30)*

(c) The Law of Diminishing Marginal Utility states that as more of a product is consumed, eventually each additional unit of the good provides less additional utility (marginal utility).

(i) Explain **two** assumptions underlying the Law of Diminishing Marginal Utility.

A consumer in equilibrium buys 6 health bars at €0.80 each and 9 cartons of juice at €1.50 each. The marginal utility of the 6th health bar is 40 utils.

(ii) Using the **Equi-Marginal Principle of Consumer Behaviour** calculate the marginal utility of the ninth carton of juice. (Show all your workings.)

(25)

[75 marks]

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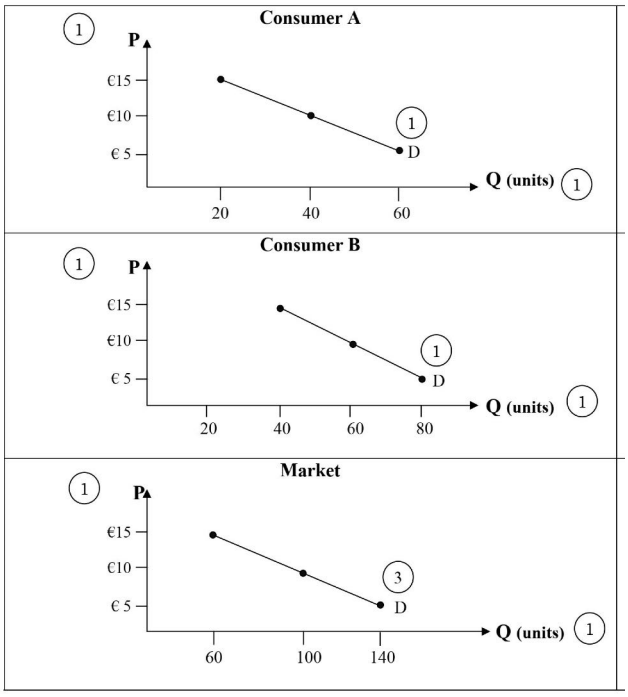
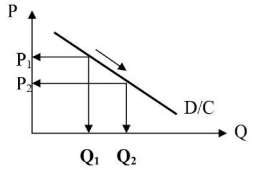
a

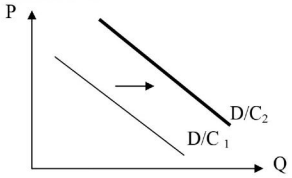


Caused by a change in the selling price of the good itself, ceteris paribus/all other things being equal.

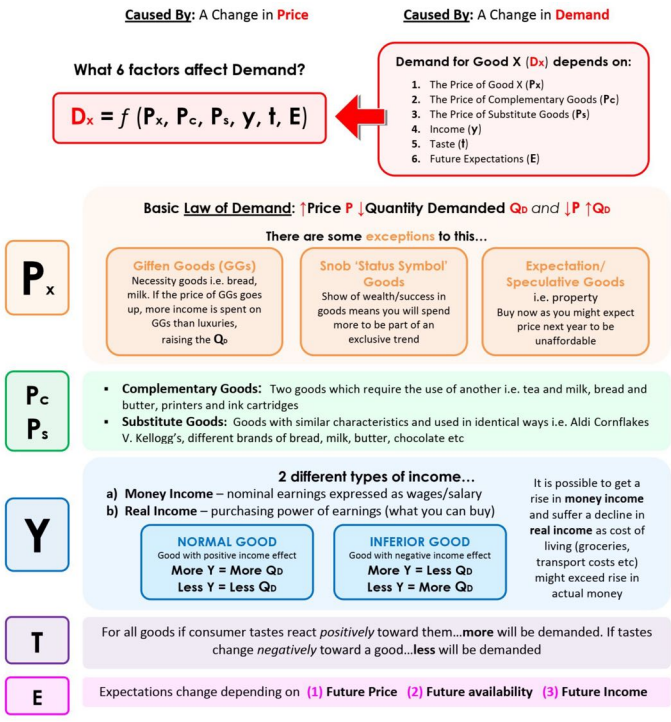
Diagram:



If any of the factors other than the price of the good itself change this will result in a shift in the demand curve.



b



c

1. Applies after a certain point called the origin.
The origin is the minimum quantity of the commodity which can be used effectively and until this stage has been reached, marginal utility may not diminish.

2. It does not apply to Addictive goods.
The consumer may gain increasing marginal utility by consuming each additional unit of an addictive good.

3. Time lapse between consumption of successive units. Sufficient time has not elapsed between the consumption of successive units.
If a person eats a number of oranges, each additional orange consumed will give diminished marginal utility. However, if a person eats one on a Monday, one on a Thursday and one on Sunday, because of the time which has elapsed between the consumption of each extra orange marginal utility may not diminish.

4. 'Other factors' affecting utility do not change.
The law is based on the assumption that other factors which may affect a consumer's utility do not change including income levels, the nature of successive units of the commodity; and the consumer's taste for the commodity.

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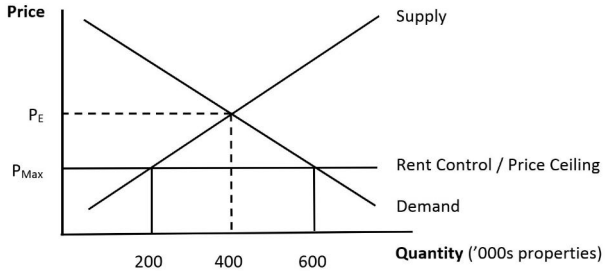
1. **(a)** (i) Define the economic terms **individual demand** and **market demand**.
(ii) Outline **three** factors that would affect market demand for fitness watches.
[25]

(b) Assume the market for a brand of **Irish crisps** is in equilibrium. Explain, with the aid of a **separate** diagram in **each** case, the effects which each of the following is most likely to have on the initial equilibrium position of this market:
(i) The lack of rainfall in 2018 creates a drought which reduces potato crops.
(ii) Vegan consumers stage protests against animal-derived flavouring on crisps.
(iii) Crisp companies receive a subsidy from the government.
[30]

(c) The latest figures from the Residential Tenancies Board (RTB) show rents continue to trend upwards, with average national rent increasing to €1,122 in Q3 2018, an increase of €78 since Q3 2017.

(**Source:** The RTB Q3 2018 Rent Index, December 2018)



The diagram above illustrates a government intervention in the form of rent control (price ceiling).
(i) Explain the impact of the implementation of the rent control, with reference to the diagram above.
(ii) Outline the possible economic consequences on the Irish rental property market of this government intervention.
[20]
[75 marks]

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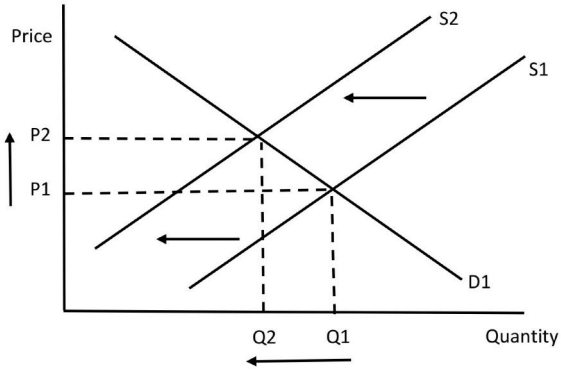
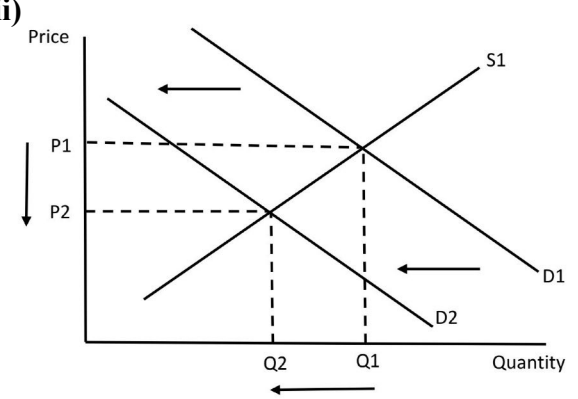
b

i)

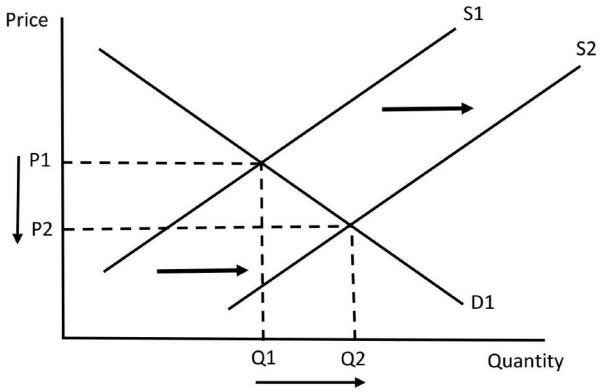


- The lack of rainfall reduces the potato crop which is a raw material used in the production of crisps.
- This will cause the supply curve for crisps to shift to the left from S1 to S2.
- The price will rise from P1 to P2.
- The quantity will fall from Q1 to Q2.

ii)



- The protests against the product will create negative publicity for the product reducing its popularity with consumers.
- This will cause the demand curve for crisps to shift to the left from D1 to D2
- The price will fall from P1 to P2.
- The quantity will decrease from Q1 to Q2.



- A subsidy is a payment from the govt. to encourage the production of a good.
- This payment will cause the supply curve to shift to the right from S1 to S2.
- The price will decrease from P1 to P2
- The quantity will increase from Q1 to Q2.

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continued ->

2007 **1.** **(a)** **(i)** Define the economic terms: **individual (firm) supply;** **market supply**.

(ii) Explain, with the aid of labelled diagrams, the relationship between individual (firm) supply and market supply.

(20 marks)

(b) Explain, with the aid of a labelled diagram, the supply curve of an individual firm in **each** of the following circumstances. State one example in **each** case.

(i) A firm is willing to increase supply as price rises, but there is a minimum price below which the firm will not supply at all.

(ii) A firm can supply only up to a maximum production capacity.

(iii) The product is fixed in supply (e.g. perishable good) and a firm is operating in the short run.

(30 marks)

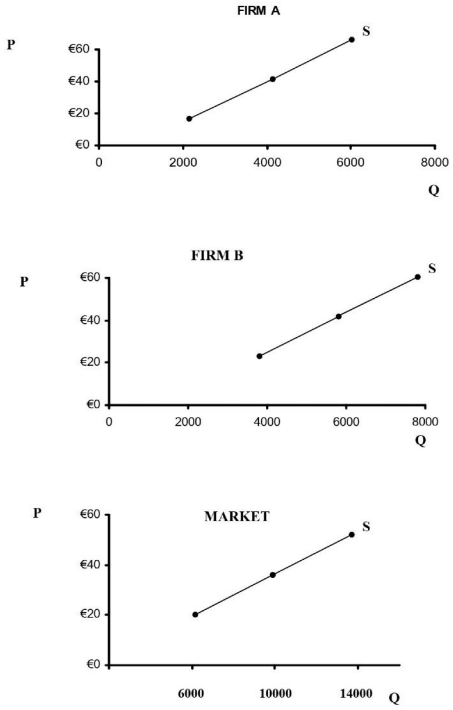
(c) Outline **FOUR** factors, other than price, which affect the supply curve of an individual firm. In each case explain how the factor affects the supply curve.

(25 marks)
[75 marks]

a

(i) **Individual supply**: the quantity of a good an individual firm is willing to supply at different prices.
Market supply: the total quantity of a good that all firms are willing to supply at different prices.

(ii)

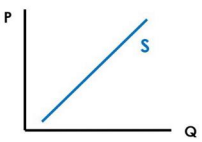


To derive the market supply we add the quantity supplied by each individual firm at each price to calculate the overall quantity supplied to the market at each price.

b

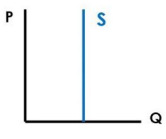
Basic Supply Curve

Basic Law of Supply
↑Price P ↑Quantity Supplied Q_s *and* ↑P ↑Q_s



Perfectly Inelastic Supply

↑↓P will not ↑↓Supply
Situation where the quantity supplied **(Qs)** is fixed and must be sold (at any price) i.e. perishable goods

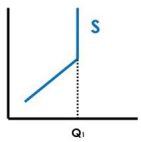


Minimum Supply

A **minimum price** (P_1) is established by suppliers below which **supply = 0** i.e. Trade Union imposing minimum price at which workers will be supplied

Maximum Output **(Limited Capacity)**

A point is reach where more **cannot be supplied (Q_1).** Producers cannot increase output due to constraints in their factory, i.e. lack of inputs i.e. machinery, raw materials



c

What 5 Factors Affect Supply?

$S_x = f(P_x, P_r, C, T, U)$

Supply of Good X (S_x) depends on:

1. The Price of Good X (**P_x**)
2. The Price of Related Goods (**P_r**)
3. Cost of Production (**C**)
4. State of Technology (**T**)
5. Unforeseen Circumstances i.e. adverse weather (**U**)

P_x Basic Law of Supply: ↑Price P ↑Quantity Supplied Q_s *and* ↓P ↓Q_s

P_r **Related Goods** are goods which could be produced instead of **Good X**. If the price of a related good (**P_r**) rises, the supplier will shift production away from **Good X** and increase the supply of **Good R** will rise at the expense of **Good X**

C

SUPPLY FALLS if...
- Labour costs *rise*
- Raw material (input) costs *rise*
- Taxes *rise*
- Grants/Subsidies to firms *fall*

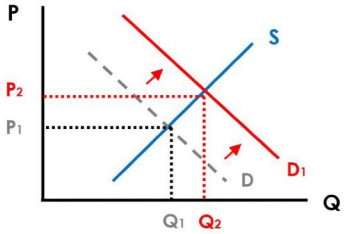
SUPPLY RISES if...
- Labour costs *fall*
- Raw material (input) costs *fall*
- Taxes *fall*
- Grants/Subsidies to firms *rise*

T As technology **improves**, supplying (distributing) goods becomes easier and less costly

U Factors outside the control of the firm might jeopardise shipments i.e. warehouse fire, transport difficulties due to adverse weather or war

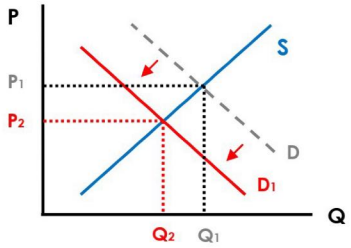
Market Equilibrium seems easy but can be difficult to describe exactly in exams

We can summarise what determines changes in demand and supply as follows:



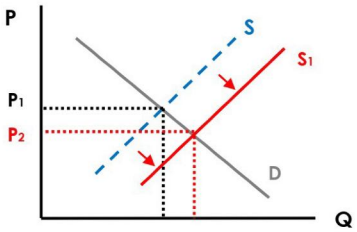
RISE IN DEMAND

1. ↑P_S Price of substitute good
2. ↓P_C Price of complementary good
3. ↑Y Income (normal good)
4. Change in Tastes (t) in favour of good
5. Expectations (E) of future scarcity and price rise



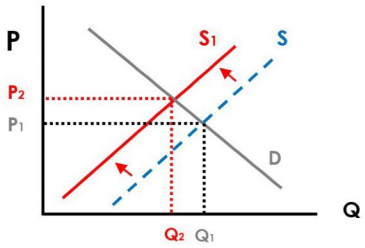
FALL IN DEMAND

1. ↓P_S Price of substitute good
2. ↑P_C Price of complementary good
3. ↓Y Income (normal good)
4. Change in Tastes (t) against good
5. Expectations (E) of future abundance and price fall



RISE IN SUPPLY

1. ↓P_R Price of related good
2. ↓C Cost of production
3. ↑T State of technology
4. Favourable unplanned factors (i.e. good growing conditions for crops)



FALL IN SUPPLY

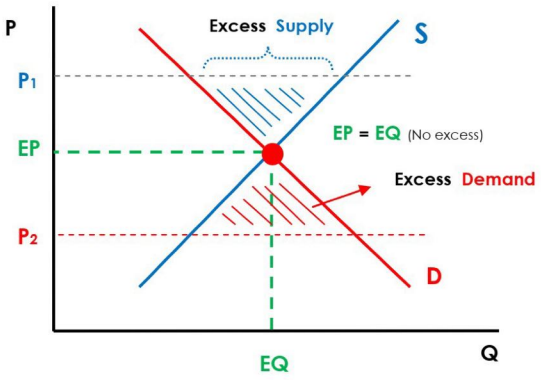
1. ↑P_R Price of related good
2. ↑C Cost of production
3. Unfavourable unplanned factors (i.e. severe growing conditions for crops)

KEY: The interaction of **supply** and **demand** determines the optimal **PRICE** and **QUANTITY DEMANDED** (aka **Equilibrium P** and **Q**)

So, what changes the **equilibrium price** and **equilibrium quantity?**

Change	Equilibrium Price	Equilibrium Quantity
Demand Rises	Rises	Rises
Demand Falls	Falls	Falls
Supply Rises	Falls	Rises
Supply Falls	Rises	Falls

The Interaction of Demand and Supply



Principle of Equimarginal Utility

2021

Question 8

John always spends his income in the following ratio of price to marginal utility:

$$\frac{MUx}{Px} = \frac{2500}{200} = \frac{MUy}{Py} = \frac{1250}{100} = \frac{MUz}{Pz} = \frac{75}{?}$$

(a) Calculate the price John would be willing to pay for one unit of good Z.
Complete your calculations in the box below.

Workings:
Answer:

(b) Explain why John would pay this price.

Elasticities

1 Introduction

With our understanding of demand, supply and factors which shift such curves, we will now try to quantify how sensitive demand will be to price and other movements.So let's start with reviewing what elasticities we will need to know:

- PED: A movement along a demand curve due to price change will cause quantity to increase or decrease
- YED: An increase in come will cause quantity demanded to increase

2 Price Elasticity of Demand

These appear difficult at first but become very intuitive. We start with some definitions and then do some examples. PED and YED are the elasticities most deeply examined.

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Understanding price elasticity of demand (*PED*)

According to the law of demand, there is a negative relationship between price and quantity demanded: the higher the price, the lower the quantity demanded, and vice versa, all other things equal. We now want to know *by how much* quantity responds to change in price.

Price elasticity of demand (*PED*) is a measure of the responsiveness of the quantity of a good demanded to changes in its price. *PED* is calculated along a given demand curve. In general, if there is a large responsiveness of quantity demanded, demand is referred to as being *price elastic*; if there is a small responsiveness, demand is *price inelastic*.

The formula required is simply

♦ Calculate PED using the following equation.

$$PED = \frac{\text{percentage change in quantity demanded}}{\text{percentage change in price}}$$

but we need a more elaborate definition for the exam.

$$\text{price elasticity of demand} = PED = \frac{\text{percentage change in quantity of good } X \text{ demanded}}{\text{percentage change in price of good } X}$$

If we abbreviate 'change in' by the Greek letter Δ, this formula can be rewritten as:

$$PED = \frac{\%\Delta Q_x}{\%\Delta P_x}$$

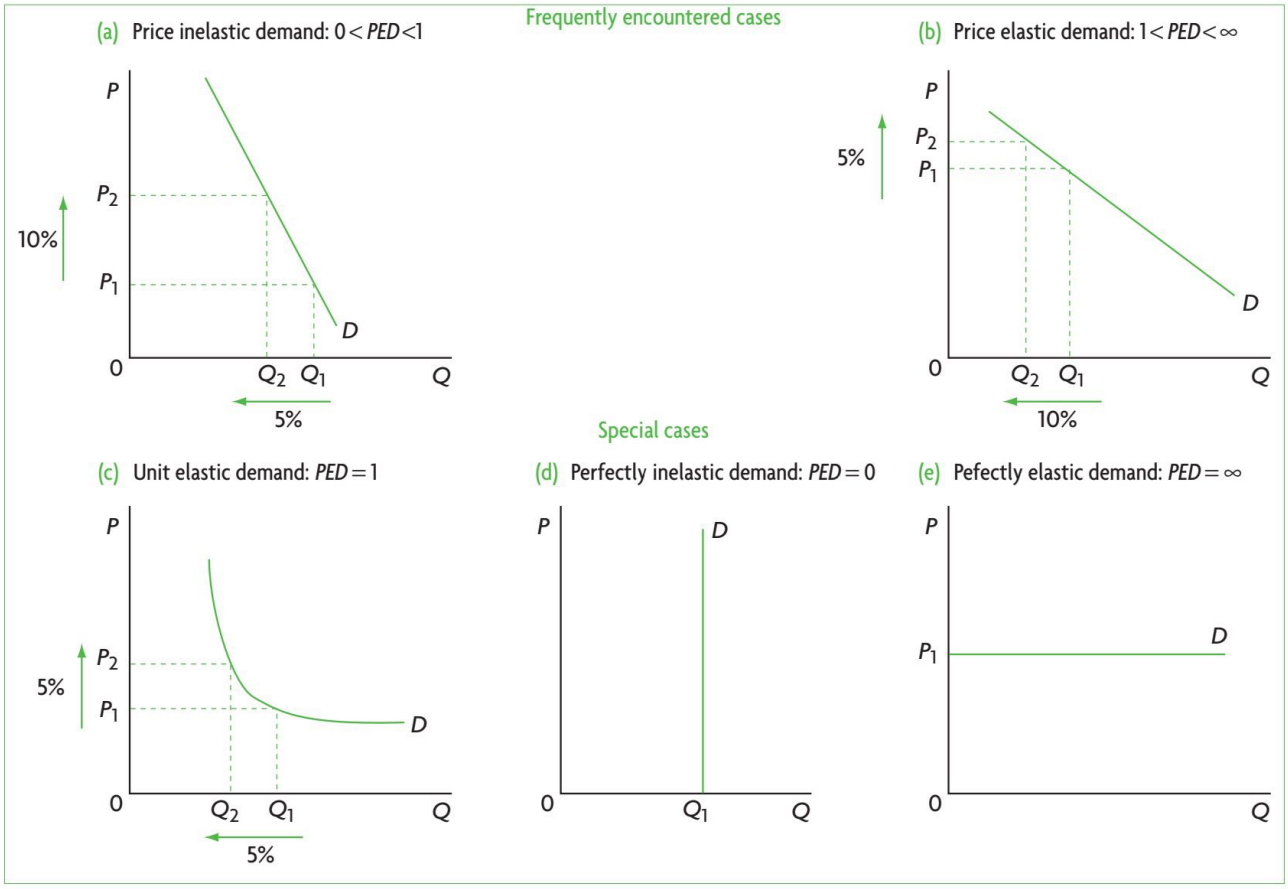
Simplifying, the above formula can be rewritten as:

$$PED = \frac{\frac{\Delta Q_x}{Q_x} \times 100}{\frac{\Delta P_x}{P_x} \times 100} = \frac{\frac{\Delta Q_x}{Q_x}}{\frac{\Delta P_x}{P_x}}$$

For the exam we will use the following formula

$$\frac{\Delta Q}{\Delta P} x \frac{P_1 + P_2}{Q_1 + Q_2}$$

And we have different regimes of sensitivity. For economic goods that obey law of demand, the PED is negative, an increase in price produces a fall in quantity demanded. In the following table I just take the absolute value.



Value of *PED*	Classification	Interpretation
Frequently encountered cases		
$0 < PED < 1$ (greater than zero and less than one)	inelastic demand	quantity demanded is relatively unresponsive to price
$1 < PED < \infty$ (greater than 1 and less than infinity)	elastic demand	quantity demanded is relatively responsive to price
Special cases		
$PED = 1$	unit elastic demand	percentage change in quantity demanded equals percentage change in price
$PED = 0$	perfectly inelastic demand	quantity demanded is completely unresponsive to price
$PED = \infty$	perfectly elastic demand	quantity demanded is infinitely responsive to price

This is style of exam

Read each statement below and indicate if the price elasticity of demand (PED) for the product is most likely to be elastic or inelastic. (Tick ✓ the correct box.)

STATEMENT	ELASTIC	INELASTIC
Consumers are strongly attached and loyal to the product.		
Many close substitutes are available for the product.		
The product is a luxury product.		
The product accounts for only a small fraction of a consumer's weekly expenditure.		

(16 marks)

3 Income Elasticity of Demand

We saw that one factor that causes a shift to the right in the demand function is income. YED allows us quantify how sensitive such demand is for different categories of product. Definitions and formulas below For the exam

$$\frac{\Delta Q}{\Delta Y} x \frac{Y_1 + Y_2}{Q_1 + Q_2}$$

Income elasticity of demand

Understanding income elasticity of demand

- Outline the concept of income elasticity of demand, understanding that it involves responsiveness of demand (and hence a shifting demand curve) to a change in income.

Consumer income is another factor influencing demand for a good and the position of the demand curve.

Income elasticity of demand (*YED*) is a measure of the responsiveness of demand to changes in income, and involves demand curve shifts. It provides information on the direction of change of demand given a change in income (increase or decrease) and on the size of the change (size of demand curve shifts).

Calculating *YED*

- Calculate YED using the following equation.

$$\text{YED} = \frac{\text{percentage change in quantity demanded}}{\text{percentage change in income}}$$

$$\text{income elasticity of demand} = YED = \frac{\text{percentage change in quantity demanded of good } X}{\text{percentage change in income}}$$

$$YED = \frac{\%\Delta Q_x}{\%\Delta Y}$$

which can be rewritten as:

$$YED = \frac{\frac{\Delta Q_x}{Q_x} \times 100}{\frac{\Delta Y}{Y} \times 100} = \frac{\frac{\Delta Q_x}{Q_x}}{\frac{\Delta Y}{Y}}$$

Normal goods positive but inferior goods negative, ceteris paribus.

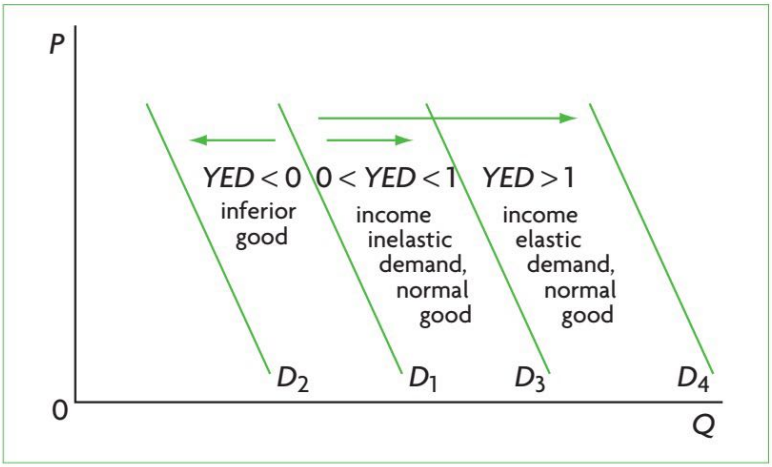
The sign of income elasticity of demand: normal or inferior goods

♦ Show that normal goods have a positive value of YED and inferior goods have a negative value of YED.

This allows us link back to normal, inferior and luxury goods. It should help us solidify our understanding of the syllabus basics.

- *YED*>0 Income elasticity of demand is positive (*YED*>0) when demand and income change in the same direction (i.e. both increase or both decrease). A positive *YED* indicates that the good in question is *normal*. Most goods are normal goods (see page 24).
- *YED*<0 A negative income elasticity of demand (*YED*<0) indicates that the good is *inferior*: demand for the good and income move in opposite directions (as one increases the other decreases). Examples include bus rides, second-hand clothes and used cars; as income increases, the demand for these goods falls as consumers switch to consumption of normal goods (new cars, new clothes, and so on; see page 24).

- *YED*<*1*: *Necessities* If a good has a *YED* that is positive but less than one, it has **income inelastic demand**: a percentage increase in income produces a smaller percentage increase in quantity demanded. Necessities are income inelastic goods.
- *YED*>1: *Luxuries* If a good has an *YED* that is greater than one, it has **income elastic demand**: a percentage increase in income produces a larger percentage increase in quantity demanded. Luxuries are income elastic goods.



A LCH section A problem. These are not difficult but like marginal utility calculations, we have to get used to the jargon!

The table below shows the annual average level of income in a country and the corresponding demand for Product A for two years.

Year	Income (€)	Product A (units)
Year 1	57,000	100
Year 2	63,000	200

(i) Calculate the income elasticity of demand (YED) for Product A.
Show your workings.

(ii) Using your knowledge of YED, explain the economic meaning of this figure you calculated in (i) above.

_____

_____

_____

_____

Workings:

Answer:

(17 marks)

And a longer question which combines PED and YED.

Question 4
In budget 2021, the price of a 20 pack of cigarettes rose from €13.50 to €14.00.
Cigarettes are classed as 'Demerit Goods' and as such their purchase constitutes a market failure.

(a) Explain your understanding of the economic term **Demerit Goods**.

Answer (b) or (c)

(b) Explain why the purchase of demerit goods, such as cigarettes, is seen as a market failure.

OR

(c) Explain why the Irish Government intervenes by imposing higher taxes on cigarettes in budgets.

KILMARTIN EDUCATIONAL SERVICES

Barry Ryan

Cost concepts	Definition	Equation
Explicit cost	The monetary payment made by a firm to an outsider to acquire an input.	
Implicit cost	The income sacrificed by a firm that uses a resource it owns.	
Economic cost	The sum of explicit and implicit costs, also equal to the firm's total opportunity costs.	
Total fixed cost (*TFC*)	Costs that do not change as output changes; arise from the use of fixed inputs.	
Total variable cost (*TVC*)	Costs that vary (change) as output changes; arise from the use of variable inputs.	
Total cost (*TC*)	The sum of fixed and variable costs.	$TC = TFC + TVC$
Average fixed cost (*AFC*)	Fixed cost per unit of output.	$AFC = \frac{TFC}{Q}$
Average variable cost (*AVC*)	Variable cost per unit of output.	$AVC = \frac{TVC}{Q}$
Average total cost (*ATC*)	Total cost per unit of output.	$ATC = AFC + AVC$
Marginal cost (*MC*)	The change in cost arising from one additional unit of output.	$MC = \frac{\Delta TC}{\Delta Q} = \frac{\Delta TVC}{\Delta Q}$
Long-run average total cost (*LRATC*) curve	A curve showing the lowest possible average cost that can be attained for any level of output when all of the firm's inputs are variable.	
Product concepts		
Total product (*TP* or *Q*)	The total amount of product (output) produced by a firm.	
Marginal product (*MP*)	The additional product produced by one additional unit of variable input.	$MP = \frac{\Delta TP}{\Delta \text{ units of variable input}}$
Average product (*AP*)	Product per unit of variable input.	$AP = \frac{TP}{\text{units of variable input}}$
Revenue concepts		
Total revenue	The total earnings of a firm from the sale of its output.	$TR = P \times Q$
Marginal revenue	The additional revenue of a firm arising from the sale of an additional unit of output.	$MR = \frac{\Delta TR}{\Delta Q}$
Average revenue	Revenue per unit of output.	$AR = \frac{TR}{Q}$
Profit concepts		
Economic profit	Total revenue minus economic costs (or total opportunity costs, or the sum of explicit plus implicit costs).	
Normal profit	The minimum amount of revenue required by a firm so that it will be induced to keep running, which is that part of revenue that covers implicit costs, including entrepreneurship (after all explicit costs have been covered).	

Cost Curves

A cost curve is a graph of the costs of producing a good as a function of the amount of that good produced. Firms will always aim to minimise costs per unit while maximising profits (revenue *less* costs)

The Marginal Cost Curve

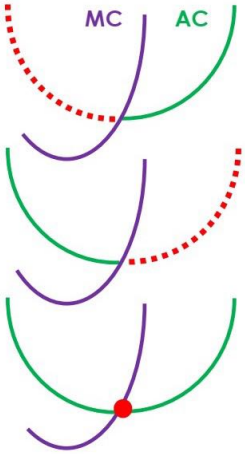
(Think of firms cost of producing apples…)

TinyApple Inc makes only 5 apples

- Each of the 5 apples costs €1 each to produce so the average cost (AC) = **€1**
- The firm decides to make one more apple (marginal cost MC = the cost of that *extra* apple)
- The extra/marginal cost is **80c**

80c < €1 *so* **MC < AC**

- Now, 6 apples are produced costing €1, €1, €1, €1, €1 and 80c…average **97c each**

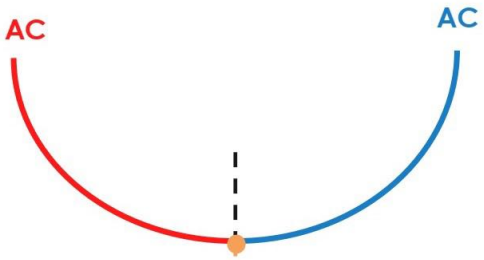


If MC<AC…then **AC** is **FALLING**

If MC>AC…then **AC** is **RISING**

If MC=AC…then **AC** is **at its lowest point**

The Average Cost Curve

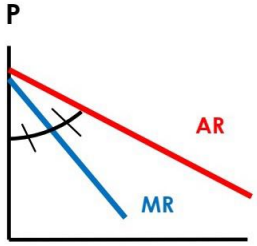


Downward sloping
1. Better spread of fixed assets
2. Specialisation of labour

Upward sloping
Diseconomies of scale

MES: Minimum Efficient Scale
Scale of production where internal **Economies of Scale (EOS)** are fully exploited

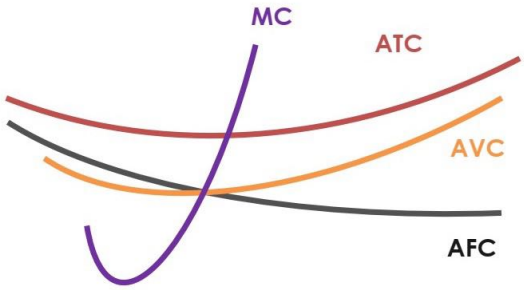
The Revenue Curves



AR: As Q↑, income per unit falls and cost per unit rises. **AR↓**

MR: Like AC, AR is **falling** when MR<AR **(MR** is twice as steep as **AR)**

More Cost Curves



MC — The cost of producing that extra unit

AFC — Spread of ***fixed*** assets per unit of production. **Fixed assets** = buildings *or* equipment . You pay rent or maintenance on these which doesn't change as the company ↑ (unless you buy more of them)
As Q produced↑ AFC per unit↓

AVC — Spread of ***variable*** assets per unit of production. **Variable assets =** overheads, labour costs or raw materials. These change as production grows. **As Q produced ↑, AVC falls ↓ (at first), then rises ↑)**

ATC — Total average cost (**fixed + variable**)

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4. The table below shows the short run production costs for a small firm producing and selling kitchen furniture.

Number of units of output	Fixed Costs	Variable Costs	Total Costs
	€	€	€
1	400	600	1,000
2	400	1,200	1,600
3	400	1,850	2,250
4	400	2,900	3,300
5	400	4,100	4,500

(a) (i) Using the information in the table above calculate the following:
- The **marginal cost** of producing the 4th unit.
- The **average cost** of producing 5 units.
- The **profit** earned by the firm selling 5 units of output at €1,200 per unit. (Show your workings.)

(ii) Using the information in the table above, draw the firm's short run average cost (AC) curve. Explain the reasons for its shape. *(30)*

(b) '*The cost of doing business in Ireland is falling. However, some costs continue to increase or remain relatively high'.* *(National Competitiveness Council Report, 2010)*

(i) Discuss the economic advantages of falling costs of production for the Irish economy.
(ii) Outline possible restrictions on the growth of businesses in the Irish economy at present. *(30)*

(c) The British Petroleum (BP) oil spill in the Gulf of Mexico in 2010 is estimated to have cost a total of $40 bn. Identify **two** costs for BP and **two** costs to society associated with this oil spill.

(15)

[75 marks]

- The **marginal cost** of producing the 4th unit

€3,300 – €2,250 = €1,050

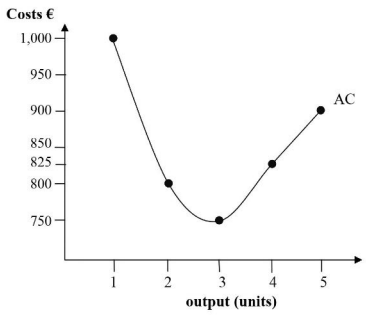
- The **average cost** of producing 5 units

$\frac{€4,500}{5}$ = **€900**

- The **profit** earned by the firm selling 5 units of output at €1,200 per unit

5 x €1,200 (€6,000) – €4,500 = €1,500

(ii) **Diagram: 12 marks. Explanation: 6 marks**



Slopes downward:
- Declining FC per unit / FC spread over a larger number of units of output
  or
- Specialisation of labour: helps reduce cost per unit

Slopes upward:
- Increasing VC per unit because of the Law of Diminishing Marginal returns

---

(ii) Outline possible restrictions on the growth of businesses in the Irish economy at present.

1. Limited availability of credit
The banking crisis has resulted in a lack of credit, which is a major obstacle to the expansion of business.

2. Reduction in domestic demand
The continuing recession has resulted in a major drop in spending resulting in a drop in domestic demand and less opportunities for business.

3. Restrictive wage agreements
The existence of the minimum wage; the existence of JLC agreements limits the ability of firms to hire labour which restricts the ability of firm to expand/ grow.

4. Legislative requirements / framework
Permission may have to be obtained from the local authority; state body etc. For example if a person wants to extend a restaurant then certain requirements must be fulfilled.

5. Merger / takeover legislation
Some businesses wishing to expand may face an investigation under EU (Irish) merger and takeover legislation. The proposed takeover of Aer Lingus by Ryanair was prohibited under EU laws.

6. High costs of production.
Businesses find it difficult to expand due to high operating costs e.g. rates; utility costs; insurance costs; costs of raw materials; and high interest rates makes borrowing more expensive.

---

1. Increased competitiveness
With lower costs prices may fall for Irish goods and exports may become cheaper.

2. Lower prices
With lower prices inflation may fall and this may entice consumers to purchase more goods.

3. Increased demand
Businesses may have increased demand resulting in increased sales, profits and a more secure future. Tax revenue to the government may also increase.

4. Increased employment
With rising demand businesses may increase their demand for labour / maintain existing labour.

5. Attract investment / Improve international reputation
Lower costs for businesses will encourage expansion and attract foreign firms into Ireland.

6. Profits may increase
As a result of lower costs business profits may increase, leading to an increase in CPT revenues.

Costs for BP – Private costs	Costs to society – Social costs
Cost of repairing the defective oil rig BP must pay for the equipment, labour and other associated costs.	**Environmental damage** Society suffers due to the damage to the waters, wildlife and natural beauty of the area.
Clean-up costs They must pay for the clean-up of the affected waters and the shoreline.	**Cost of investigation / clean-up** Taxpayers must pay for the costs of the investigation into the disaster and clean-up costs to communities.
Compensation costs For those fishermen and businesses who lost business due to the oil spill.	**Disruption to local communities / tourism** The spill has resulted in a downturn in economic activity in the affected communities / leading to job losses.
Reduction in share price / asset value The market value of the company fell and shareholders must bear this cost.	**Damage to food chain** The oil spill may result in restricted supply of (fish) thereby forcing prices upwards.
Reduction in profits Lost production resulted in reduced sales and lower profits.	**Higher oil prices** The reduction in supply led to shortages and higher international oil prices.
Lost oil Until the well was capped BP lost tons of oil which cost the company.	

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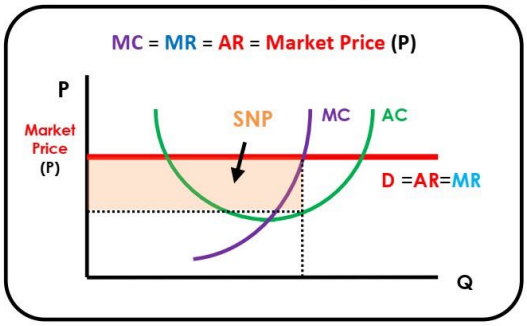
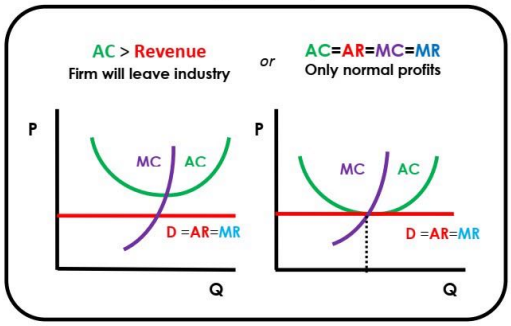
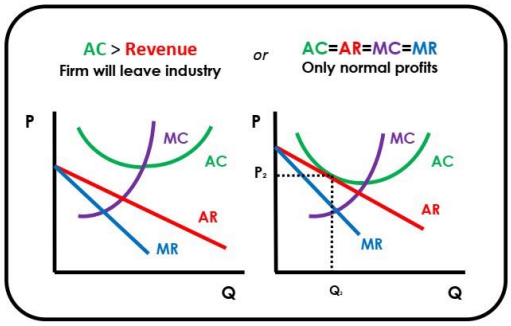
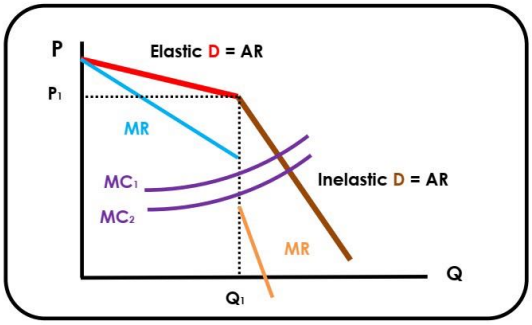
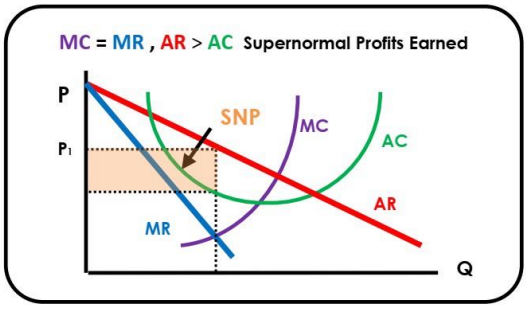
There are 4 different types of market structure

Perfect Competition | Imperfect Competition | Oligopoly | Monopoly

Increasing market power, concentration and market price
Declining market efficiency and competition

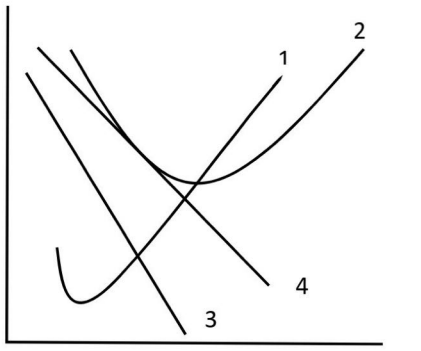
	Short Run (SR)	Long Run (LR)
Perfect Competition		
Imperfect Competition	**SAME AS MONOPOLY**	
Oligopoly		**SR = LR**
Monopoly		**SR = LR**

	Perfect Competition	Monopoly	Imperfect Competition	Oligopoly
No *of* Firms	**Many** (all producing identical goods)	**One** (supplies one good to the entire market)	**Many** (all producing similar but *not* identical goods)	**Small group of firms**

1 The diagram below represents the long run equilibrium of a firm in **imperfect competition**.

(i) Write in full the label (not abbreviation) for each of the lines numbered 1 to 4. Use the answer box provided.

Number	Label
1	
2	
3	
4	



(ii) Show clearly on the diagram the long run equilibrium price, quantity and cost for the firm.

(iii) State whether or not the firm is earning supernormal profits. Give a reason for your answer.

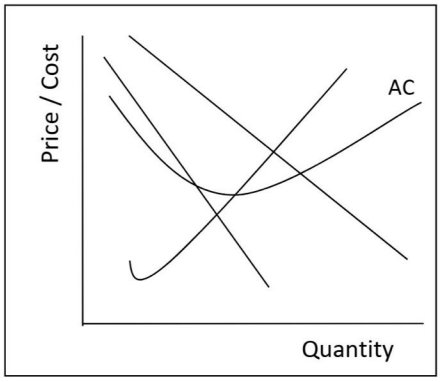
_____

_____

(16 marks)

---

2 The diagram below shows a firm operating under conditions of **Monopoly**.
(a) Label the lines/curves in the diagram and (b) Use the diagram to explain the **long run equilibrium position** for a firm in Monopoly.



Explanation:

(i) _____

(ii) _____

(iii) _____

(iv) _____

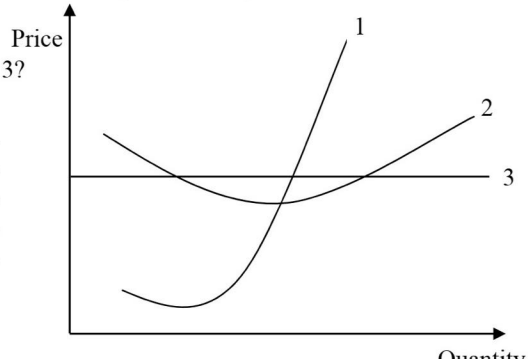
(17 marks)

---

3 The diagram below shows a firm operating under conditions of **perfect competition** in the short run.

(a) What is represented by the lines numbered 1 to 3? Use the answer box provided.

Number	Name
1	
2	
3	



(b) (i) Show clearly on the diagram the total supernormal profit of the firm.

(ii) Explain the term **supernormal profit**_____

_____

(16 marks)

4 Name the market structure (Perfect Competition, Imperfect Competition or Monopoly) to which each statement below is most likely to apply:

	STATEMENT	MARKET STRUCTURE
(i)	The firm has a perfectly elastic demand curve.	
(ii)	The product of the firm is unique.	
(iii)	Restaurants could be an example of this market structure.	
(iv)	Average costs of the firm are at a minimum.	

(16 marks)

---

5 In relation to each statement listed below, indicate whether it is an **internal** or **external** (a) **economy of scale** or (b) **diseconomy of scale**. (Place a tick (√) for each correct answer.)

	(a) Economy of Scale		(b) Diseconomy of Scale	
Statement	**Internal**	**External**	**Internal**	**External**
Repetitive tasks, workers are bored				
R&D costs are shared by many firms				
Discounts are available for bulk buying				
Inadequate infrastructure				

(16 marks)

---

6 The firm in perfect competition is a **'price taker'**.

(a) Explain this statement.

_____

_____

_____

(b) Other than price taking, outline **two** characteristics of a perfectly competitive market.

(i) _____

_____

(ii)_____

_____

(16 marks)

7 Firms attempting to enter a **monopoly** market must overcome barriers to entry.
Outline **THREE** such barriers to entry.

(i) _____

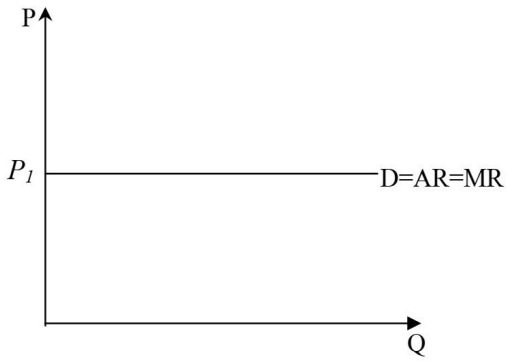
(ii) _____

(iii) _____

(16 marks)

---

8 The diagram below represents the demand curve facing a firm in Perfect Competition.



This demand curve is; **(✓ correct answer)**

- Unitary Elastic ☐
- Perfectly Inelastic ☐
- Perfectly Elastic ☐

State the reason for your choice:

_____

_____

(16 marks)

9 'Imperfect Competition is wasteful of resources'. Do you agree with this statement? Yes /No
Explain your answer.

_____

_____

_____

(17 marks)

---

10 (a) Collusion may be a feature of an oligopolistic market. Explain what is meant by 'collusion'.

_____

_____

(b) Collusive practices may be undermined by price wars. Outline **two** benefits of price wars for the consumer.

(i) _____

(ii) _____

(16 marks)

11 **(a)** State the **Law of Diminishing Marginal Returns**.

_____

_____

_____

_____

(b) Does this law apply in the short run or in the long run? Explain your answer.

_____

_____

(16 marks)

---

12 Firms within the aircraft industry can benefit from economies of scale. Explain the term **economies of scale** and provide **one** example for a firm in the aircraft industry.

Explanation _____

_____

_____

Example _____

_____

(16 marks)

---

13 *A high concentration ratio is a key feature of an Oligopolistic Market.*

(a) Explain this statement and give **one** example.

_____

_____

_____

(b) Outline two ways oligopolists behave in the market:

(i) _____

_____

(ii) _____

_____

(16 marks)

4. (a) With the aid of **two** clearly labelled diagrams, explain the relationship between:
(i) the short run average cost curve and long run average cost curve.
(ii) the short run average cost curve and marginal cost curve. (25)

(b) Discuss the economic factors which should be considered by a firm when deciding where to locate its operations. (25)

(c) Ocean Blue Ltd produces two boats weekly and incurs the following weekly costs:

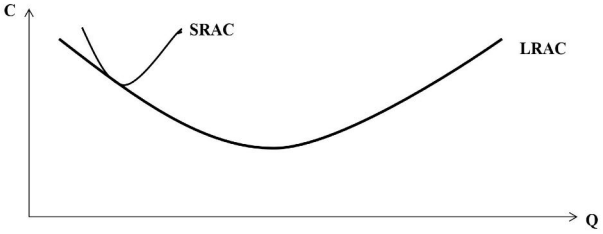
- Rent: €1,200
- Raw materials: €2,000
- Labour: €1,600
- Normal profit: €1,000

What is the minimum price at which **each** boat can be sold if production is to continue:
(i) in the short run? (ii) in the long run?

Explain your answers in **each** case. (25)

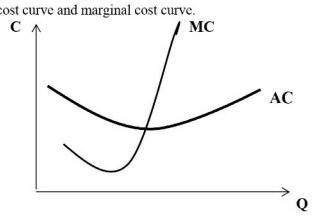
[75 marks]

(i) the short run average cost curve and long run average cost curve.



SRAC: Each SRAC curve represents a different scale of operation / size of firm.

(ii) the short run average cost curve and marginal cost curve.



When MC **is greater than** AC then **AC is rising**
When MC **is less than** AC then **AC is falling**
When MC **equals** AC then **AC is at a minimum** / constant

(i) Short run:

	€
Raw Materials	2,000
Labour	1,600
Total variable costs	3,600 / 2
Minimum price per boat	1,800

Explanation: a firm must cover its variable costs in the short run

(ii) Long run:

	€
Raw Materials	2,000
Labour	1,600
Rent	**1,200**
Normal profit	**1,000**
Total costs	5,800 / 2
Minimum price per boat	2,900

Explanation: a firm must cover all its costs in the long run

2014 **2.** **(a)** (i) State and explain **three** assumptions underlying the theory of imperfect competition.
(ii) Explain why a firm's demand curve under imperfect competition differs from a firm's demand curve under perfect competition.

(25)

(b) (i) Explain, with the aid of a diagram, the long run equilibrium of a firm in imperfect competition.
(ii) With reference to your diagram in (b) (i) explain why the firm is not making socially efficient use of scarce resources.

(30)

(c) "A few large retailers (e.g. Tesco, SuperValu, Dunnes Stores, Aldi, Lidl) dominate the Irish grocery market at present."
Suggest a market structure which most closely reflects this situation. Explain your answer.

(20)

[75 marks]

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a)

There are many buyers
An individual buyer, by his/her own actions, can not influence the market price of the goods.

There are many sellers in the industry
An individual seller can influence the quantity sold by the price it charges for its output.

Product differentiation exists
The goods supplied by the firm are not homogenous but are close substitutes.
Firms use branding to distinguish their products from one another.

Freedom of entry and exit
No barriers to entry exist within the industry.
It is possible for firms to enter/leave the industry as they wish.

Reasonable knowledge
Within the industry each firm has reasonable knowledge of profits made by other firms.
Consumers have a reasonable knowledge of the prices being charged for different products.

Each firm attempts to maximise profits
Firms produce where MC = MR.
Each firm will attempt to minimise costs of production.

Perfect competition

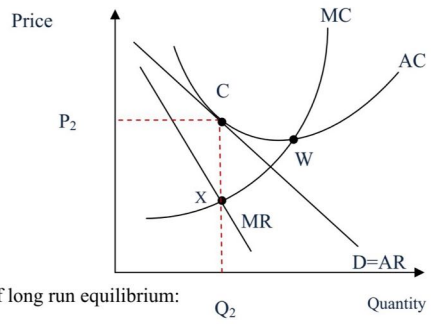
The demand curve facing a perfectly competitive firm is horizontal or perfectly elastic (D=AR=MR). This is because each firm is selling an identical (i.e. homogeneous) product and each firm's quantity sold is small relative to the total market size. Any attempt to undercut the market price will result in complete switching to identical products of competitors.

Imperfect competition

The demand curve facing a firm in imperfect competition is downward-sloping. This is because each firm sells a differentiated product, which creates scope for brand loyalty. Each firm has a product that consumers view as somewhat distinct from the products of competing firms.
If the firm increases the product price there will be a reduction in demand as some consumers will switch to rival firms' goods (close substitutes) that have become relatively cheaper.

b)

(i) Explain, with the aid of a diagram, the long run equilibrium of a firm in imperfect competition.



Explanation of long run equilibrium:

- Equilibrium / profit maximisation occurs (at point X) where MC = MR (*MC is rising and cuts MR from below*).
- The level of output produced is Q_2 and the price the firm sells this output at is P_2.
- The average cost of production is shown at point C / not producing at lowest point of AC.
- This firm is earning normal profits because AR = AC.

An imperfectly competitive firm does not produce at the socially efficient lowest point on its AC curve, point W.
They are not producing at the lowest point of AC due to product differentiation. Product differentiation makes a firm's product appear different through additional costs such as advertising and branding.
Price exceeds the marginal cost of production. The extent of the difference between P and MC represents the degree of monopoly power the firm is able to exert in the market for its differentiated product.
Because it is not producing at the lowest point of the average cost curve, there is spare/excess capacity in its operations and society does not benefit from maximum utilisation of resources. Consumers gain variety at the expense of social efficiency.

2. **(a)** (i) Outline **three** characteristics of a monopoly firm.
(ii) Explain why some degree of monopoly power must exist for price discrimination to occur.

[20]

(b) (i) Explain, using a clearly labelled diagram, the long-run equilibrium position of a monopoly firm.
(ii) With reference to the diagram you have drawn in part **(b)** (i), explain why a firm's demand curve under monopoly differs from a firm's demand curve under perfect competition.

[30]

(c) *Big Western technology firms such as Apple, Google, Facebook and Amazon are accused of being BAADD – Big, Anti-competitive, Addictive and Destructive to Democracy. The presumption that big businesses must necessarily be wicked is plain wrong.*
(**Source**: The Economist, January 2018)

(i) State and explain **three** advantages of large-scale businesses, using examples from the technology industry.
(ii) Outline the possible effects on a monopoly market structure of government regulation to reduce anti-competitive behaviour.

[25]
[75 marks]

---

a

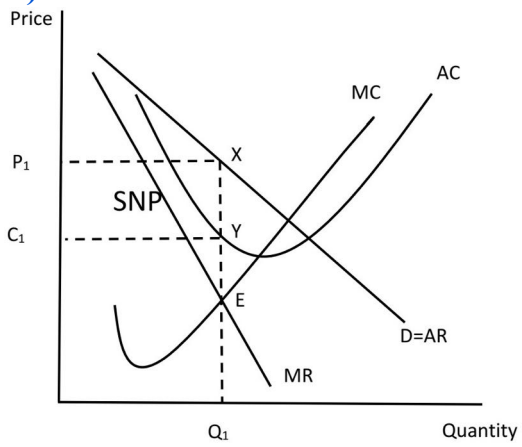
i)

1. The firm is the sole supplier in the industry. The firm's output is equal to the industry output.
2. The firm seeks to maximise profits by producing where MC=MR and MC cuts MR from below.
3. The firm controls either price or quantity but cannot control both.
4. High barriers to entry exist and these prevent the entry of new firms into the industry which could threaten the position of the monopolist.
5. A unique good is sold so the consumers cannot find any substitute for the good e.g. services provided by Irish Rail have no close substitute so it is in a monopoly position.

ii)

There must be some degree of monopoly/market power (degree of price setting power held by a supplier on the basis of its market share) to allow producers the ability to price set and not to price take.
If there were rival firms selling substitute goods in the industry, they could undercut the higher price eliminating all demand and supernormal profits in the more expensive market.

b i)



Explanation

1. Equilibrium
   - Occurs at point E where
   - MC = MR [and MC is rising]
2. Price/ Output
   - The firm produces Q_1
   - and sells it at P_1
3. Cost
   - The cost is shown at C_1 (point Y)
4. SNP
   - The firm is earning SNP (P_1,C_1,Y,X)
   - because AR > AC or they can continue to exist due to barriers to entry.
5. Inefficiency
   - The firm is not producing at the lowest point on the AC curve.
   - It is thus inefficient/wasteful of resources.

ii)

In the monopoly market structure firms face a **downward-sloping demand curve.** Firms can determine / set the price or quantity but not both. The demand curve obeys the law of demand, in order to increase the quantity demanded firms must decrease the price.

In the perfectly competitive market structure firms face a **horizontal or perfectly elastic** demand curve. The price is determined by market demand and supply, the firm must accept this price i.e. it is a price-taker. Since firms are selling homogenous goods in insignificant quantities they are unable to influence the industry price.

Economics
Factors of Production

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Land

Land is one of the 4 factors of production (FOP)

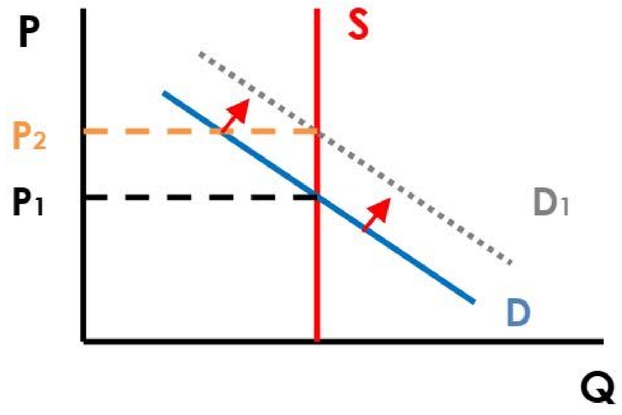
Land is anything from nature and used in the production of goods/services

Agricultural land	**Rivers, Lakes and Seas**	**Mineral Wealth** and **Natural Resources**	**Forests**	**Atmosphere, Weather** and **Climate**
Foodstuffs, crops, fruit and veg, animal pasture	Fisheries, farming (all natural)	(non renewable)	Timber for construction (non renewable unless replanted)	Adequate rainfall and sunshine

Economic Characteristics of Land

(A) Fixed in Supply

- Supply **S** cannot be ↑ in response to ↑Demand from **D** to D_1 (you can't make more land)
- ↑Demand will simply cause an ↑price from P_1 to P_2



(B) No Cost of Production

- It cost nothing to put land in place (costs only involved in using land). Why?
- Land requires the addition of labour, capital and enterprise
- Land is non-specific – cant be transferred form one use (agricultural) to another (commercial)
- Since land costs nothing, the entire payment to land is **economic rent** (see **#17**)

Payment to a FOP **−** **Transfer Earnings** Minimum **=** **Economic Rent** Surplus

4. **(a)** Explain, with the aid of an example, **each** of the following terms:

- Derived Demand
- Transfer Earnings
- Supply Price
- Economic Rent.

(20)

(b) (i) Outline **two** economic characteristics of 'land'.
(ii) Discuss **three** economic factors which influence a firm's decision on where to locate its operations within Ireland.

(25)

(c) (i) State and explain **three** factors that caused the price of residential property to fall considerably in Ireland in the years following 2007.
(ii) Mortgage arrears (i.e. the inability to meet mortgage loan obligations) is the biggest single personal debt issue for many households.

Discuss **one** possible economic impact of **mortgage arrears** on **each** of following:

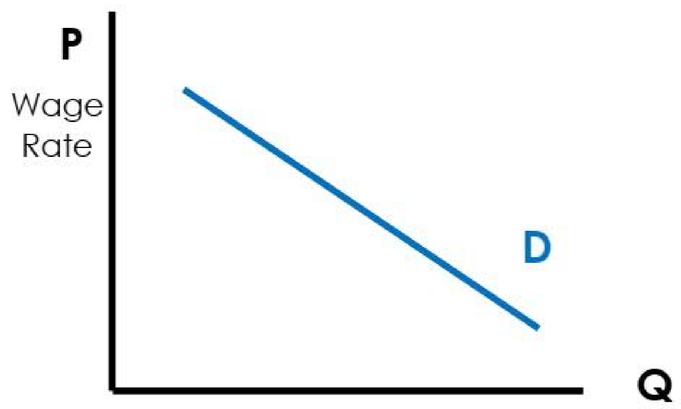
- the household
- the banking sector
- the Irish Government.

(30)

[75 marks]

Labour is any manmade effort which goes into the **production of goods/services**

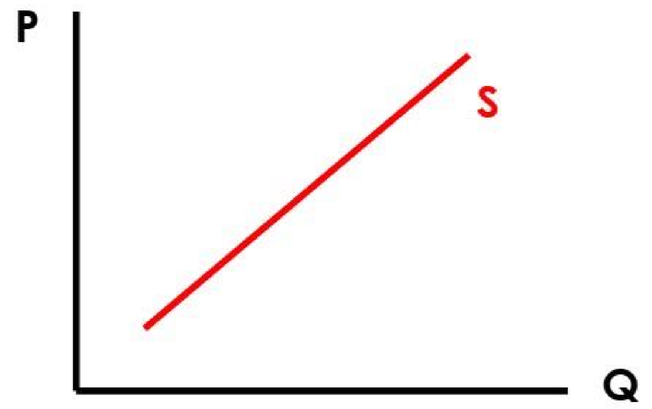
USUAL DEMAND CURVE



As **Wages↑, Market Demand** for **Labour↓**

- Demand given by the MRP curve of labour
- Employers become less likely to hire due to high cost)

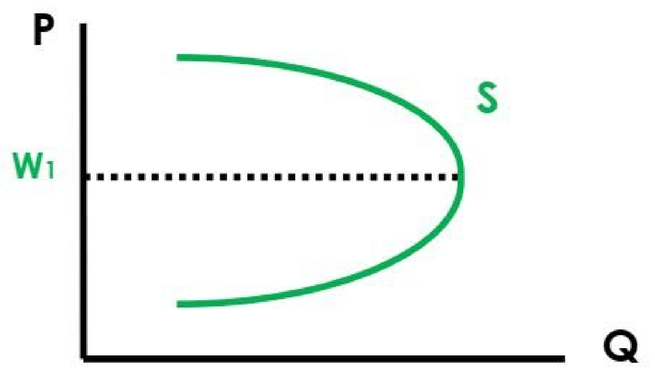
USUAL SUPPLY CURVE



As **Wages↑, Supply** of **Labour↑**

- Higher wages cause more to join labour force (> participation)
- Higher wages mean existing workers work more and are usually more productive (more motivated)

BACKWORD BENDING SUPPLY CURVE



Some Workers Work Less as Wages Increase

- Workers prefer more leisure time after wages hit a certain level (given here W_1).
- $>W_1$ more leisure and less work

DEMAND for Labour

Productivity (Output produced per employee)

Availability of Government Subsidies

Demand *for* **Company Products**

Trade Union Involvement

Taxation on Company Profits

Taxation on Company Employees (PAYE)

Availability of New Technology

3. **(a)** State and explain **four** economic influences on an individual firm's demand for labour. (25)

(b) Explain, with the aid of a labour market diagram in each case, how equilibrium wage rates are determined in:

- A free labour market;
- A labour market where a trade union has negotiated a minimum wage. (25)

(c) Women in Ireland earn on average 17.1% less per hour than men, according to a study by the European Commission (*Tackling the gender pay gap in the European Union*, 2011).

(i) Outline **two** possible reasons for the lower wage rates earned by women in the Irish economy.

(ii) Outline **one** measure that could be taken to close the gender pay gap. (15)

(d) Explain briefly Karl Marx's economic theory about the exploitation of labour in a capitalist system.

(10)

[75 marks]

Capital

Capital (K) is anything made by man and **used in the production** of goods/services

Main Features

1. **K makes labour more productive**
2. **Creation of K involves opportunity cost**

   Investment requires saving
   Sacrificing current consumption so future consumption can be higher
3. **Savers provide funds for investors**

Who Saves?

- Those who **incomes exceed current needs**
- Those who decide to **forego present consumption** (in favour of future consumption) i.e. save for a holiday next year

A. **People** don't spend all their income (personal savings)
B. **Companies** don't spend all their profits (retained earnings/dividends)
C. **Government** doesn't spend all its budget surpluses (if available)

SAVERS owners of K who receive a reward (interest)

INVESTORS users of K who pay rewards (interest)

Why Save?

- Buy goods/services in the future
- 'Just in case' rainy day fund
- Retirement income
- Build up credit rating

Factors Affecting Savings = f (y, Int , I , S , Ts & Gp)

y — ↑y ↑Amount saved

Int — ↑Interest Rate ↑Amount saved (> Incentive)

I — If **Inflation Rate > Interest Rate**
Real rate of interest is negative
> Inflation = Less incentive to save

S — The **higher** the level of state pension financing, the **lower** level of individual saving for retirement

Ts & Gp

- Gov can ↑↓ tax on interest **(DIRT)**
- Gov can grant tax relief on personal pension plans (encouraging saving)
- Gov can use unique strategies such as Special Savings Incentive Accounts **(SSIA)**

Factors Affecting Rate of Interest

Rate charged by ESCB (European System of Central Banks)

Liquidity of Loan
> Period of loan = >Rate of interest charged

Rate of Inflation
> Inflation = > ROI

Risk to Lender
> Risk =
> Rate of Return expected

Demand for Loans
>Demand >ROI

Factors Affecting Investment

Process of adding to the stock of capital (capital formation)

Rate of Interest
> ROI = < Willingness to invest

Future Demand Expectations

Cost of Capital

Gov Policy

State of Technology

Availability of **Skilled Labour Force**

3. **(a)** Distinguish between the following terms, using relevant examples in **each** case:

(i) Fixed Capital and Social Capital;
(ii) Savings and Investment;
(iii) Capital Widening and Capital Deepening.

(25 marks)

(b) State and explain **FIVE** factors affecting the level of investment in the Irish economy.

(25 marks)

(c) **(i)** State and explain Keynes's **THREE** motives for holding money.

(ii) Explain, with the aid of a diagram(s), Keynes's theory on the relationship between the holding of money and the rate of interest.

(25 marks)
[75 marks]

A certain minimum quantity of each of the 4 factors of production (FOP) is required to produce any good or service (g/s)

What determines **Demand** for a FOP?

Derived Demand

Factor not wanted for its own sake – it is useful to produce a g/s people want

↑Demand for finished good =
↑Demand for factors needed to make it

Profitability of Return

The firms choice to employ more FOPs depends on the extra (marginal) **output** and **revenue** earned from employing them

Marginal Physical Productivity (MPP)

The **extra output** produced as a result of the employment of an extra unit of FOP i.e. new worker, new machine etc

MPP rises at *low* levels because of increasing returns to labour

1. **MPP rises** at first due to **specialisation** and **division of labour**
2. **MPP** will **fall** eventually due to **law of diminishing returns**

Marginal Revenue Productivity (MRP)

The **extra revenue** produced as a result of the employment of an extra unit of FOP i.e. new worker, new machine etc

If the firm is a price taker (as in Perfect Competition)…

MRP = MPP x Price

A firms MRP curve represents the **firms demand** curve for that factor. **MRP** will **fall** eventually due to **law of diminishing returns**

Why doesn't a firm just set **MRP = Price?**

- **MPP** for one factor is not always = **MPP** of another
- Difficult to measure **MPP**

The Issue of Economic Rent

Payment to a factor of production
Land rent
Labour wages
Capital interest
Enterprise profit

−

Transfer Earnings
Minimum payment necessary to keep FOP in current use (discourage movement to another employment)

=

Economic Rent
Any **surplus** earned by a FOP over and above its **transfer earnings**

How to Control Economic Rent?

Impose A Max Price
(like banker wages in new state owned banks)
But skilled workers in demand can always earn high economic rents

Tax It

Government Reduces/ Eliminates it by **increasing FOP supply**

(a) Explain the following terms in relation to the factor of production labour.
(i) Participation rate
(ii) Real wages
(iii) Labour Productivity
(iv) Derived demand [20]

(b) (i) State and explain **three** factors which influence the efficiency of labour as a factor of production.
(ii) On 1 January 2019 the Government increased the National Minimum Wage from €9.55 to €9.80 an hour.
Discuss the possible economic advantages and disadvantages of increasing the National Minimum Wage. [35]

(c) *300,000 public sector workers in Ireland are set for pay rises over the next three years.* (**Source:** *RTE 2018*)

(i) Explain with the aid of a diagram the Marginal Revenue Product of labour (MRPL).
(ii) Discuss the reasons why MRPL might not be a suitable method for setting wages in the public sector. [20]

[75 marks]