

DP IB Economics: SL



2.2 Supply

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Your notes

Supply, Price & Quantity

Introduction to Supply

- **Supply is the amount of a good/service that a producer is willing and able to supply at a given price in a given time period**
- A **supply curve** is a graphical representation of the **price** and **quantity supplied** by producers
 - If data were plotted, it would be an actual curve. Economists, however, use straight lines so as to make analysis easier
- The supply curve is **sloping upward** as there is a **positive relationship** between the price and quantity supplied (QS)
 - Rational **profit maximising producers** would want to supply more as prices increase in order to **maximise** their profits
- **The law of supply** states that there is a positive (direct) relationship between quantity supplied and price, **ceteris paribus**
 - When the price rises the QS rises
 - When the price falls the QS falls

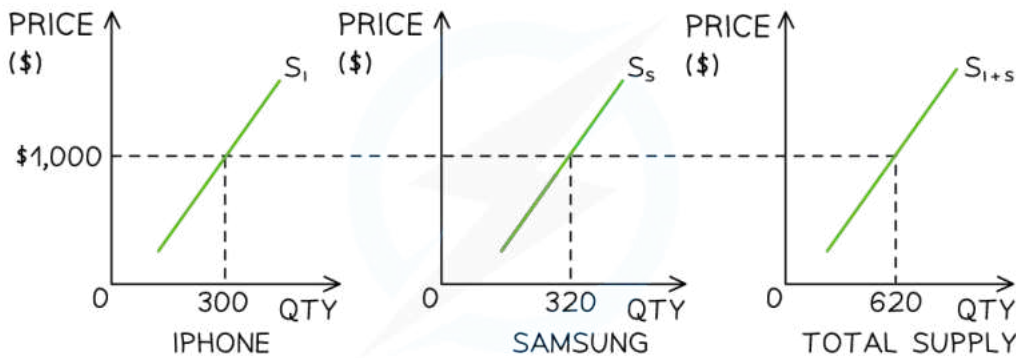
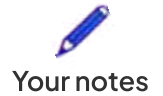
Individual and Market Supply

- **Market supply** is the combination of all the **individual supply** for a good/service
 - It is calculated by adding up the individual supply at each price level

The Monthly Market Supply of Bread from 4 Bakeries in a Small town

Bakery 1	Bakery 2	Bakery 3	Bakery 4	Market Supply
300	600	180	320	1400 loaves

- **Individual and market supply** can also be represented graphically



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Market supply for smart phones in December is predominantly the combination of iPhone and Samsung supply

Diagram Analysis

- In New York City, the market supply for smart phones in December is predominantly the combination of iPhone and Samsung supply
- **At a price of \$1000**, the supply of iPhones is 300 units and the supply of Samsung phones is 320 units
- At a price of \$1,000, the **market supply** of smart phones in New York City during December is 620 units

Assumptions Underlying the Law of Supply

- The law of supply is based on **two key assumptions**
 - The law of diminishing marginal returns
 - Increasing marginal costs
- Both of these assumptions focus on the **cost-related factors** that influence the **supply decisions of producers**
 - These assumptions explain why the supply curve slopes upward

Using Examples to Explain the Assumptions Underlying the Law of Supply

Assumption	Explanation	Example
The Law of Diminishing	<ul style="list-style-type: none"> ▪ As more of a variable factor of production (e.g. labour) is added to fixed factors (e.g. capital), there will 	<ul style="list-style-type: none"> ▪ E.g. consider a farmer who has a fixed amount of land and hires additional workers to cultivate the crops

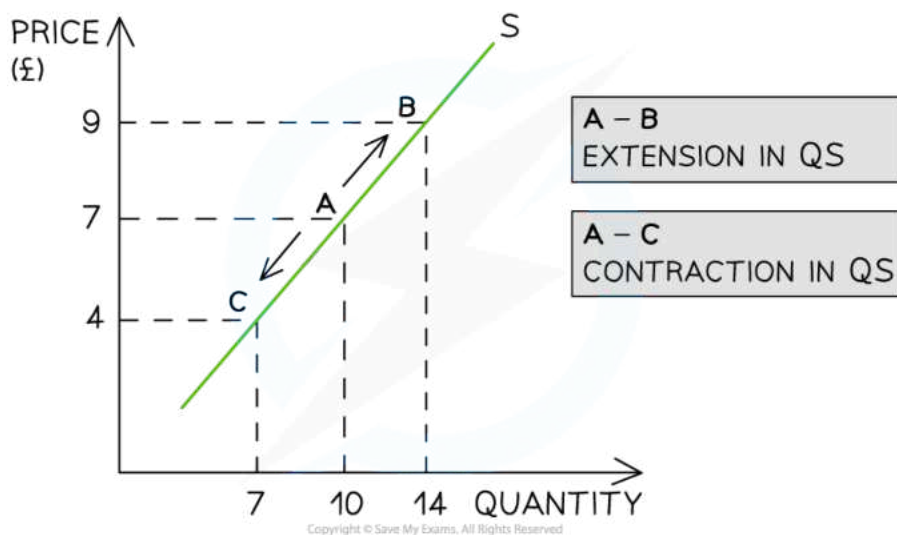
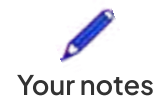


Your notes

<p>Marginal Returns</p>	<p>initially be an increase in productivity</p> <ul style="list-style-type: none"> However, a point will be reached where adding additional units of the factor (e.g. hiring an extra worker) begins to decrease productivity due to the relationship between labour and capital 	<ul style="list-style-type: none"> Initially, each additional worker contributes to a significant increase in crop output However, as more workers are hired, the additional output generated by each new worker starts to decline This is because the fixed amount of land and other resources become increasingly crowded relative to the growing labor force, leading to diminishing returns from each additional worker
<p>Increasing Marginal Costs</p>	<ul style="list-style-type: none"> The concept that as a producer increases the quantity of a good/service supplied, the additional cost of producing each additional unit also increases This relationship is reflected in the upward-sloping supply curve, indicating that producers are willing to supply a greater quantity at higher prices to justify the higher costs of production 	<ul style="list-style-type: none"> A bicycle manufacturer may have spare production capacity and can increase output by simply utilising existing resources more efficiently <ul style="list-style-type: none"> As production increases, the firm may need to invest in additional equipment, hire more workers, or incur other costs to maintain the same rate of expansion These additional costs contribute to increasing marginal costs

Movements Along a Supply Curve

- If **price** is the only factor that changes (**ceteris paribus**), there will be a change in the **quantity supplied (QS)**
 - This change is shown by a **movement along the supply curve**



A supply curve showing an extension in quantity supplied (QS) as prices increase and a contraction in quantity supplied (QS) as prices decrease

Diagram Analysis

- An **increase** in price from £7 to £9 leads to a **movement up** the supply curve from point A to B
 - Due to the **increase** in price, the quantity supplied has **increased** from 10 to 14 units
 - This movement is called an **extension in QS**

- A **decrease** in price from £7 to £4 leads to a **movement down** the supply curve from point A to C
 - Due to the **decrease** in price, the quantity supplied has **decreased** from 10 to 7 units
 - This movement is called a **contraction in QS**



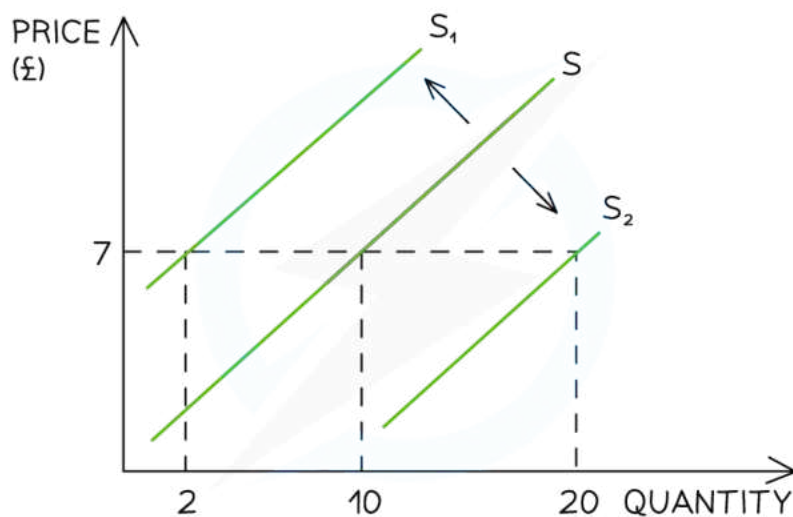
Your notes

Non-Price Determinants of Supply

The Non-Price Determinants of Supply

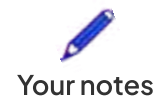
- There are several factors that will **change the supply** of a good/service, **irrespective of the price level**. Collectively these factors are called the **non-price determinants of supply** and include
 - Changes to the costs of production
 - Changes to indirect taxes and subsidies
 - Changes to technology
 - Changes to the number of firms
 - Weather events
 - Future price expectations
 - Goods in joint and competitive supply

- Changes to any of the non-price determinants of supply **shifts the entire supply curve** (as opposed to a movement along the supply curve)



A graph that shows how changes to any of the non-price determinants of supply shifts the entire supply curve left or right, irrespective of the price level

- E.g. If a firm's cost of production increases due to the increase in price of a key resource, then there will be a **decrease in supply** as the firm can now only afford to produce fewer products
 - This is a **shift in supply** from S to S₁. The price remains unchanged at £7 but the **supply has decreased** from 10 to 2 units



An Explanation of how each of the Non-Price Determinants of Supply Shifts the Entire Supply Curve at Every Price Level

Non-Price Determinant	Explanation	Condition	Shift	Condition	Shift
Changes to costs of production (COP)	<ul style="list-style-type: none"> ▪ If the price of raw materials or other costs of production change, firms respond by changing supply 	COP Increases	S decreases, shifting left (S→S₁)	COP Decreases	S increases, shifting right (S→S₂)
Indirect taxes	<ul style="list-style-type: none"> ▪ Any changes to indirect taxes change the costs of production for a firm and impact supply 	Taxes Increase	S decreases, shifting left (S→S₁)	Taxes Decrease	S increases, shifting right (S→S₂)
Subsidies	<ul style="list-style-type: none"> ▪ Changes to producer subsidies directly impact the costs of production for the firm 	Subsidy Increases	S increases, shifting right (S→S₂)	Subsidy Decreases	S decreases, shifting left (S→S₁)
New technology	<ul style="list-style-type: none"> ▪ New technology increases productivity and lowers costs of production ▪ Ageing technology can have the opposite effect 	Technology Increases	S increases, shifting right (S→S₂)	Technology Decreases	S decreases, shifting left (S→S₁)



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Change in the number of firms in the industry	<ul style="list-style-type: none"> The entry and exit of firms into the market has a direct impact on the supply E.g. If ten new firms start selling building materials in Hanoi, the supply of building material will increase 	No. of Firms Increases	S increases, shifting right ($S \rightarrow S_2$)	No. of Firms Decreases	S decreases, shifting left ($S \rightarrow S_1$)
Weather events	<ul style="list-style-type: none"> Droughts or flooding can cause a supply shock in agricultural markets A drought will cause supply to decrease. Unexpectedly good growing conditions can cause supply to increase 	Drought	S decreases, shifting left ($S \rightarrow S_1$)	Good Weather	S increases, shifting right ($S \rightarrow S_2$)
Future price expectations	<ul style="list-style-type: none"> If firms expects the price of a good/service to increase in the future, they will start supplying more If firms expects the price of a good/service to decrease in the future, they will start supplying less 	Expectations price will rise	S Increases Shifts Right ($S \rightarrow S_2$)	Expectations price will fall	S Decreases Shifts Left ($S \rightarrow S_1$)
Goods in joint supply	<ul style="list-style-type: none"> When there is an increase of supply of one good in joint supply (e.g. beef), possibly due to higher prices, there will be an increase in 	Supply of one good rises	S good A Increases Shifts Right ($S \rightarrow S_2$)	Supply of the other good rises	S good B Increases Shifts Right ($S \rightarrow S_2$)



Your notes

	supply of the other good too (e.g. leather)				
Goods in competitive supply	<ul style="list-style-type: none"> Farmers can produce many goods which are competitive in supply E.g. A farmer can grow wheat or potatoes. When they increase the supply of potatoes, the supply of wheat decreases 	Supply of one good rises	S good A Increases Shifts Right (S→S₂)	Supply of the other good falls	S Decreases Shifts Left (S→S₁)



Examiner Tips and Tricks

Several of the **non-price determinants of supply** change the costs of production. However, be sure to explain each condition as its own point before linking it to the **cost of production** e.g. a change in indirect taxation.

A common error by students is to explain that a **subsidy** (for example, £3,000 subsidy for each electric vehicle produced) shifts the demand curve for electric vehicles to the right. This is incorrect. The subsidy will shift the **supply curve** to the right. Then due to the lower price, there will be a **movement along the demand curve** (extension of quantity demanded) to create a new market equilibrium.