DP IB Economics: SL

Your notes

2.2 Supply

Contents

Supply, Price & Quantity

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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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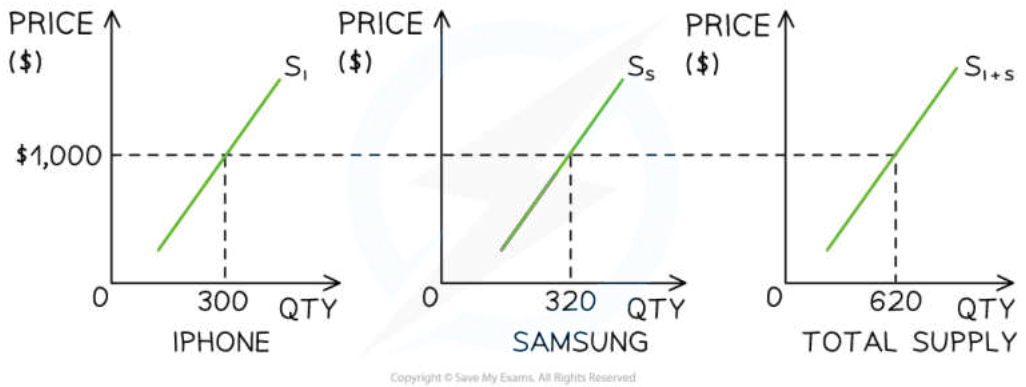

Market supply for smart phones in December is predominantly the combination of iPhone and Samsung supply

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	▪ As more of a variable **factor of production** (e.g. labour) is added to fixed factors (e.g. capital), there will	▪ E.g. consider a farmer who has a fixed amount of land and **hires additional workers** to cultivate the crops

Marginal Returns	initially be an increase in productivity ▪ 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	▪ 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**
Increasing Marginal Costs	▪ 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	▪ A bicycle manufacturer may have **spare production capacity** and can increase output by simply utilising existing resources more efficiently ▪ 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**

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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**

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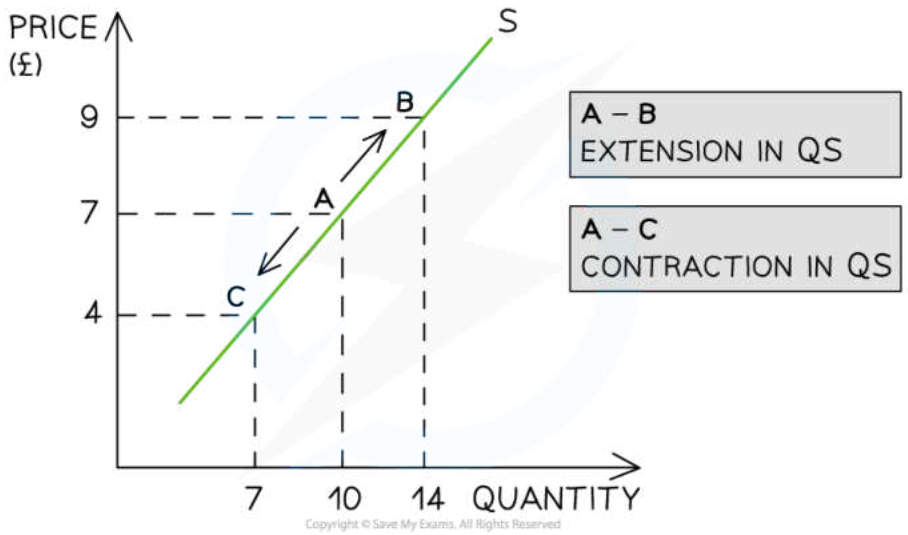

A supply curve showing an extension in quantity supplied (QS) as prices increase and a contraction in quantity supplied (QS) as prices decrease

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**

Non-Price Determinants of Supply

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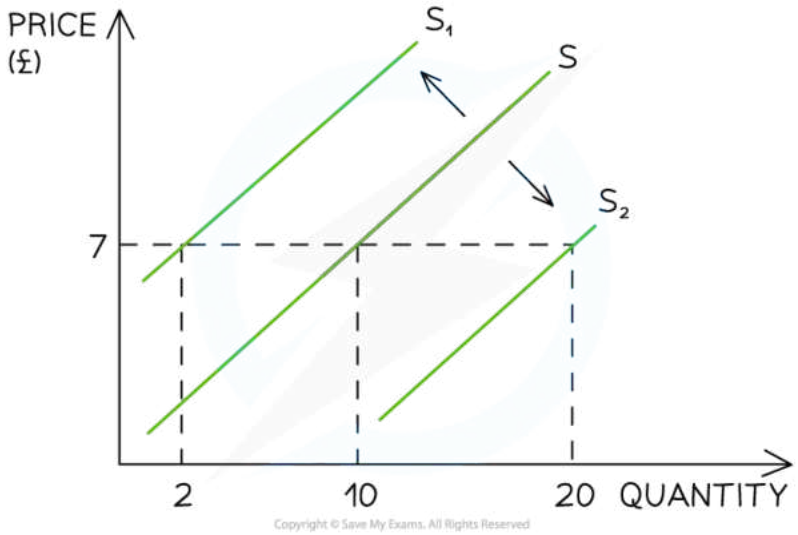
The Non-Price Determinants of Supply

- 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 S_1. The price remains unchanged at £7 but the **supply has decreased** from 10 to 2 units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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)	▪ If the price of **raw materials** or other **costs of production** change, firms respond by changing supply	**COP Increases**	**S decreases, shifting left ($S \rightarrow S_1$)**	**COP Decreases**	**S increases, shifting right ($S \rightarrow S_2$)**
Indirect taxes	▪ Any changes to **indirect taxes** change the **costs of production** for a firm and impact supply	**Taxes Increase**	**S decreases, shifting left ($S \rightarrow S_1$)**	**Taxes Decrease**	**S increases, shifting right ($S \rightarrow S_2$)**
Subsidies	▪ Changes to **producer subsidies** directly impact the **costs of production** for the firm	**Subsidy Increases**	**S increases, shifting right ($S \rightarrow S_2$)**	**Subsidy Decreases**	**S decreases, shifting left ($S \rightarrow S_1$)**
New technology	▪ New technology increases **productivity** and **lowers costs** of production ▪ **Ageing technology** can have the opposite effect	**Technology Increases**	**S increases, shifting right ($S \rightarrow S_2$)**	**Technology Decreases**	**S decreases, shifting left ($S \rightarrow S_1$))**

Change in the number of firms in the industry	▪ 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	▪ 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	▪ 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	▪ 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 ($S \rightarrow S_2$)**

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	supply of the other good too (e.g. leather)				
Goods in competitive supply	▪ 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 ($S \rightarrow S_2$)**	**Supply of the other good falls**	**S Decreases Shifts Left ($S \rightarrow S_1$)**

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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.