

# DP IB Economics: SL



Your notes

## 3.2 Variations in Economic Activity (AD & AS)

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- \* 3.2.5 Macroeconomic Equilibrium



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## 3.2.1 Aggregate Demand (AD)

# An Introduction to Aggregate Demand (AD)

- **Aggregate demand (AD)** is the **total demand** for all goods/services in an economy at any given **average price level**
- Its value is often calculated using the **expenditure approach**
  - $AD = \text{Consumption (C)} + \text{Investment (I)} + \text{Government spending (G)} + (\text{Exports} - \text{Imports}) (X - M)$
  - $AD = C + I + G + (X - M)$
- If **AD increases** then **economic growth** has occurred and vice versa
- **Consumption** is the total spending on goods/services **by consumers** (households) in an economy
- **Investment** is the total spending on **capital goods by firms**
- **Government spending** is the total spending by the **government** in the economy:
  - Includes public sector salaries, payments for the provision of merit and public goods etc.
  - It does not include **transfer payments**
- **Net exports** are the difference between the **revenue gained** from selling goods/services abroad and the **expenditure** on goods/services from abroad
  - Individuals, firms and governments export/import

## The relative importance of the components of AD

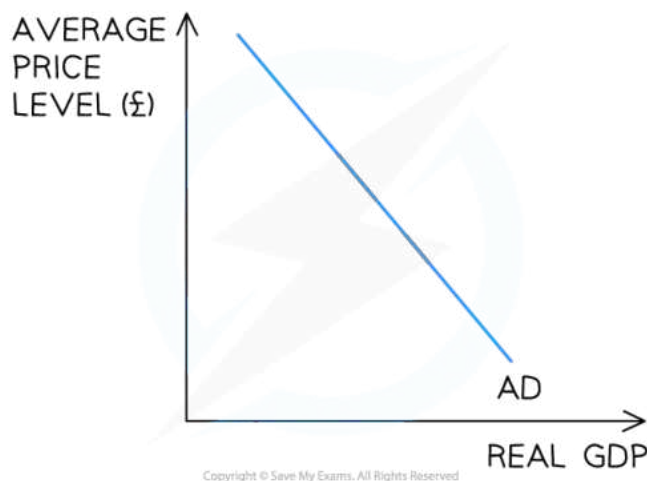
- Depending on the country, the **value of each component** and its **contribution to AD** can vary significantly:
  - **Government spending** in Sweden is **53% of AD** and in the **UK, it is 25% of AD**
- The % that each component **contributes to AD** in the UK is approximately
  - Consumption: 60%
  - Investment: 14%
  - Government spending: 25%
  - Net Exports: 1%
- A 1% increase in **consumption or government spending** will have a much **larger impact on economic growth** than a 1% increase in net exports



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## The Aggregate Demand (AD) Curve

- The relationship between the **average price level** and the **total output** in an economy is shown with an **aggregate demand (AD) curve**



*The aggregate demand (AD) curve for an economy with Average Price Level on the Y axis and Real GDP on the X axis*

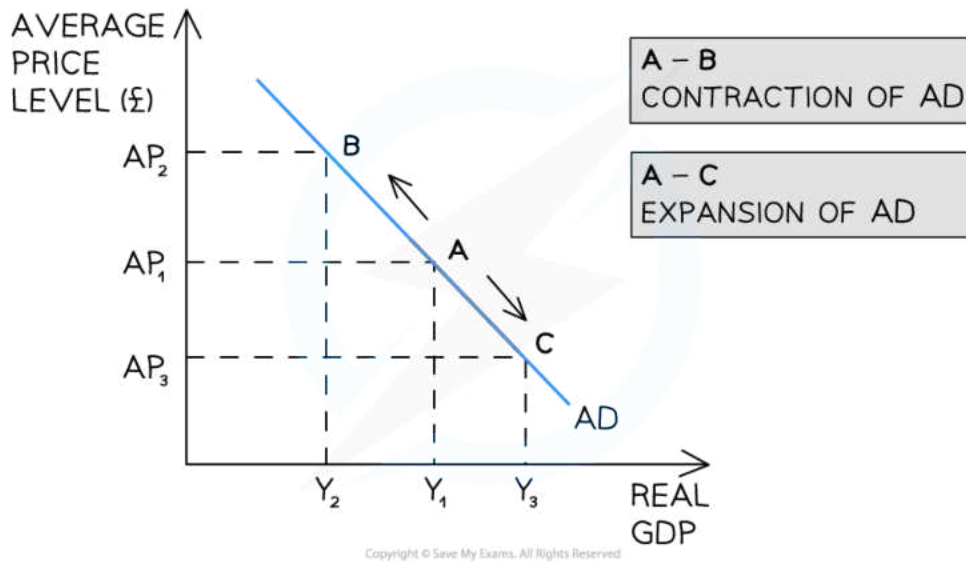
- The AD curve is **downward sloping**
  - With lower average price levels there is greater aggregate demand
  - With higher average price levels there is less aggregate demand

## A Movement Along the Aggregate Demand (AD) Curve

- Whenever there is a change in the **average price level (AP)** in an economy, there is a **movement along** the aggregate demand (AD) curve



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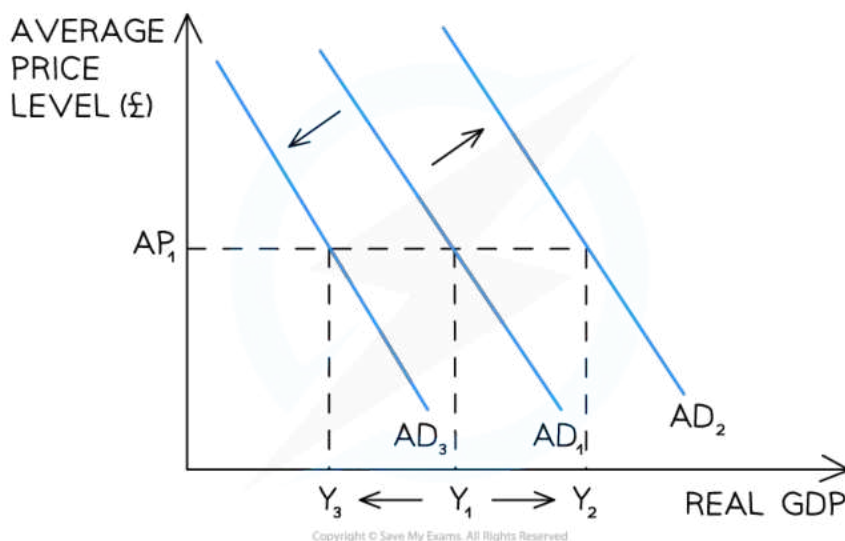
*An increase or decrease in the average price level (AP) causes a movement along the aggregate demand (AD) curve leading to a contraction or expansion of AD*

## Diagram Analysis

- An **increase in the AP (ceteris paribus)** from  $AP_1 \rightarrow AP_2$  leads to a **movement along the AD curve from A  $\rightarrow$  B**
  - There is a **contraction of real GDP** from  $Y_1 \rightarrow Y_2$
  - Y is the symbol used in macroeconomics to denote **national income or real GDP**
  
- A **decrease in the AP (ceteris paribus)** from  $AP_1 \rightarrow AP_3$  leads to a **movement along the AD curve from A  $\rightarrow$  C**
  - There is an **expansion of real GDP (output)** from  $Y_1 \rightarrow Y_3$

## Shifts of the Entire Aggregate Demand (AD) Curve

- Whenever there is a **change** in any of the **non-price determinants of aggregate demand (AD)** in an economy, there is a **shift of the entire AD curve**



*A shift in the entire aggregate demand (AD) curve occurs when there is a change in one of the determinants of AD*

## Diagram Analysis

- An **increase** in any one of the **non-price determinants of aggregate demand (AD)** results in a **shift right** of the entire curve from  $AD_1 \rightarrow AD_2$ 
  - At **every price level**, real GDP has **increased** from  $Y_1 \rightarrow Y_2$
- A **decrease** in any one of the non-price determinants of AD results in a **shift left** of the entire curve from  $AD_1 \rightarrow AD_3$ 
  - At **every price level**, real GDP has **decreased** from  $Y_1 \rightarrow Y_3$

## Factors that Influence each Component of Aggregate Demand (AD)

- Each **component of AD** is influenced by numerous factors
- A change to any of these factors will potentially change AD
- **Consumption** is influenced **by changes to** consumer confidence, interest rates, wealth, income taxes, level of household indebtedness, and expectations of future price level
- **Investment** is influenced **by changes to** interest rates, business confidence, technology, business taxes, and the level of corporate indebtedness
- **Government spending** is influenced by changes to political and economic priorities

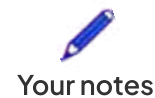
- **Net exports** are influenced by changes to the income of trading partners, exchange rates, and trade policies



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### Factors that Influence Consumption

Component	Influence on the component	Explanation
Consumption	<ul style="list-style-type: none"> <li>▪ Consumer confidence</li> </ul>	<ul style="list-style-type: none"> <li>▪ The stronger the economy, the higher consumer <b>confidence</b> <ul style="list-style-type: none"> <li>▪ Consumers <b>feel secure</b> in their jobs and are confident of receiving <b>regular salary payments</b></li> <li>▪ Consumption increases and saving decreases</li> </ul> </li> <li>▪ In a weakening or <b>recessionary economy</b>, consumer <b>confidence falls</b> <ul style="list-style-type: none"> <li>▪ Consumers <b>feel less secure</b> in their jobs</li> <li>▪ Consumption decreases and saving increases</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>▪ Interest rates</li> </ul>	<ul style="list-style-type: none"> <li>▪ A change in the <b>base interest rates</b> will change the level of <b>consumer spending and savings</b></li> <li>▪ If interest rates increase there is a <b>greater incentive to save</b> <ul style="list-style-type: none"> <li>▪ More saving = less consumption</li> </ul> </li> <li>▪ If interest rates increase, the <b>monthly repayment</b> on any loan or <b>mortgage</b> increases <ul style="list-style-type: none"> <li>▪ Higher loan repayments = less consumption</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>▪ Wealth</li> </ul>	<ul style="list-style-type: none"> <li>▪ If <b>consumer wealth</b> increases, then consumption usually <b>increases</b></li> <li>▪ <b>Rising property prices</b> or share prices give <b>consumers confidence to borrow</b> more money <ul style="list-style-type: none"> <li>▪ Increased borrowing = increased consumption</li> </ul> </li> </ul>



<ul style="list-style-type: none"> <li>Income taxes</li> </ul>	<ul style="list-style-type: none"> <li><b>Disposable income</b> is the money that <b>households</b> have left from their <b>salary/wages</b> after they have paid their <b>taxes</b> and have received any <b>transfer payments/benefits</b></li> <li>If <b>taxes increase</b>, then <b>disposable income decreases</b> - and vice versa</li> </ul>
<ul style="list-style-type: none"> <li>Level of household indebtedness</li> </ul>	<ul style="list-style-type: none"> <li><b>Debt</b> is usually repaid with monthly payments</li> <li>The higher the level of debt, the higher the <b>monthly repayment</b> and the less money available for new consumption</li> </ul>
<ul style="list-style-type: none"> <li>Expectations of future price level</li> </ul>	<ul style="list-style-type: none"> <li>If consumers believe prices will rise in the future, they are incentivised to consume now - and vice versa</li> </ul>

#### Factors that Influence Investment

Component	Influence on the component	Explanation
Investment	<ul style="list-style-type: none"> <li>Interest rates</li> </ul>	<ul style="list-style-type: none"> <li>Most investment by firms is financed through <b>business loans</b></li> <li>Decreasing <b>interest rates</b> encourage investment</li> <li>There is a mostly <b>inverse relationship</b> between investment and interest rates</li> </ul>
	<ul style="list-style-type: none"> <li>Business confidence</li> </ul>	<ul style="list-style-type: none"> <li>Firms will choose to invest if they <b>feel confident</b> that they will make a <b>good return on their investment</b> <ul style="list-style-type: none"> <li>The decision to invest is linked to the business objective of <b>profit maximisation</b></li> </ul> </li> <li>The longer a period of economic growth, the higher the business confidence will be           <ul style="list-style-type: none"> <li>If growth slows, <b>future expectations</b> of profits will decrease and <b>investment decisions</b> become harder</li> </ul> </li> </ul>



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<ul style="list-style-type: none"> <li>Technology</li> </ul>	<ul style="list-style-type: none"> <li>When a firm identifies new technology which will <b>reduce costs</b> and raise output, they are incentivised to invest</li> </ul>
<ul style="list-style-type: none"> <li>Business taxes</li> </ul>	<ul style="list-style-type: none"> <li>When governments <b>raise business taxes</b> it reduces the profits of firms</li> <li>Lower profits mean there is less money available for investment</li> </ul>
<ul style="list-style-type: none"> <li>Level of corporate indebtedness</li> </ul>	<ul style="list-style-type: none"> <li><b>Corporate debt</b> is usually repaid with monthly payments</li> <li>The higher the level of debt, the higher the <b>monthly repayment</b> and the less money available for new investment</li> </ul>

### Factors that Influence Government Spending

Component	Influence on the component	Explanation
Government spending	<ul style="list-style-type: none"> <li>Political priorities</li> </ul>	<ul style="list-style-type: none"> <li>Governing parties have different political priorities which influence spending</li> <li>Some parties believe the state should provide more goods/services and spending increases</li> <li>Other parties believe the <b>role of government</b> in society should be smaller and spending decreases</li> </ul>
	<ul style="list-style-type: none"> <li>Economic priorities</li> </ul>	<ul style="list-style-type: none"> <li><b>Fiscal Policy</b> is set once a year and announced during the presentation of the Government's budget</li> <li><b>Expenditure</b> is <b>directly related</b> to the Government's objectives and <b>policy aims</b> <ul style="list-style-type: none"> <li>E.g., <b>A policy</b> aimed at upgrading a country's rail network requires <b>increased expenditure</b></li> </ul> </li> </ul>

### Factors that Influence Net Exports





Your notes

Component	Influence on the component	Explanation
<b>(Exports – Imports)</b>	<ul style="list-style-type: none"> <li>Income of trading partners</li> </ul>	<ul style="list-style-type: none"> <li>When the household income of trading partners increases, foreigners <b>purchase more</b> products – exports increase</li> <li>When the household income of trading partners decreases, foreigners <b>purchase fewer</b> products – exports decrease</li> </ul>
	<ul style="list-style-type: none"> <li>Exchange rates</li> </ul>	<ul style="list-style-type: none"> <li>When the domestic currency <b>appreciates</b>, consumers' money <b>goes further</b> abroad – imports increase</li> <li>When the domestic currency appreciates, exports are <b>more expensive</b> for foreigners – exports decrease</li> <li>When the domestic currency <b>depreciates</b>, consumers' money <b>goes less far</b> abroad – imports decrease</li> <li>When the domestic currency depreciates, exports are <b>less expensive</b> for foreigners – exports increase</li> </ul>
	<ul style="list-style-type: none"> <li>Trade policies</li> </ul>	<ul style="list-style-type: none"> <li>If <b>protectionism</b> increases there is <b>decreased demand</b> for imports as they are more expensive</li> <li>If protectionism decreases there is <b>increased demand</b> for imports as they are less expensive – and exports usually increase due to free trade</li> </ul>

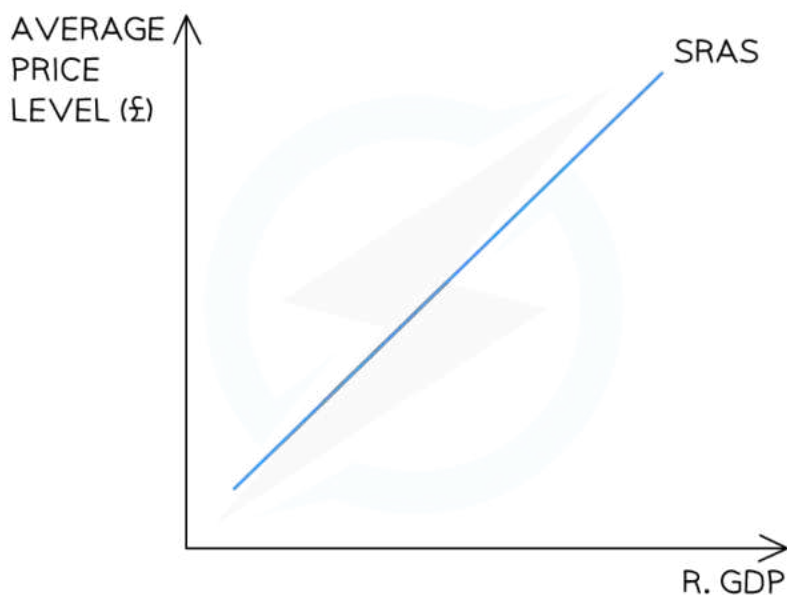


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## 3.2.2 Short-Run Aggregate Supply (SRAS)

### The SRAS Curve

- **Aggregate supply** is the total supply of goods/services produced within an economy at a **specific price level at a given time**
- **The short run** is a period in which wages and other factor prices are inflexible
- **The long run** is a period in which there is full wage and factor price flexibility



*A diagram showing the upward sloping short run aggregate supply (SRAS) curve for an economy*

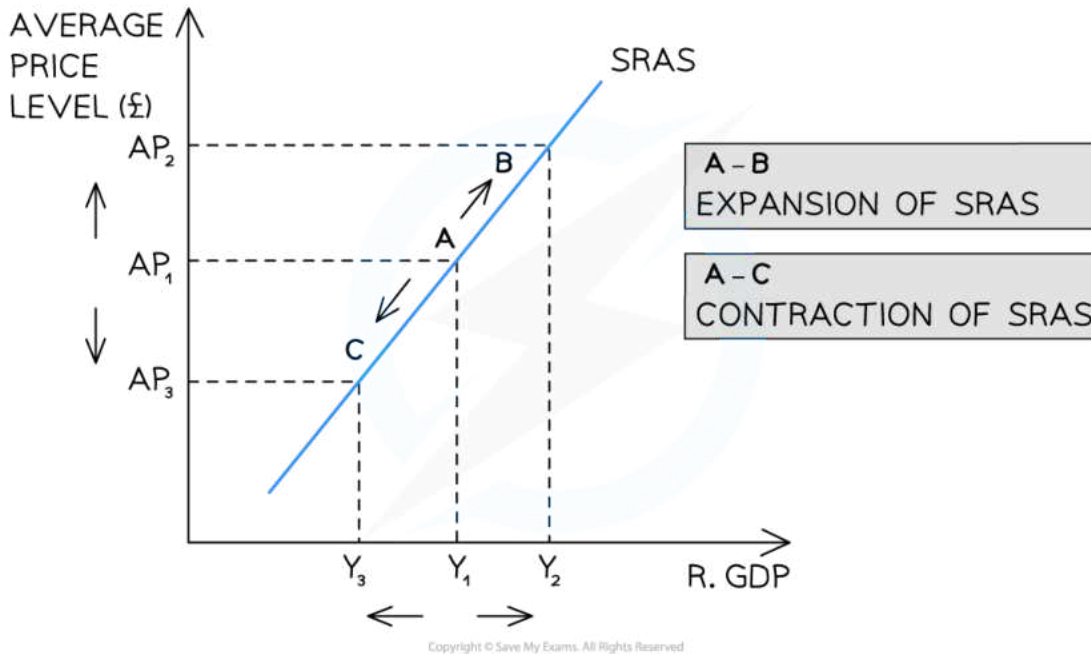
- The AS curve is **upward sloping** due to two reasons
  - The **aggregate supply** is the combined supply of **all individual supply curves** in an economy which are also upward sloping
  - As **real output** increases, firms have to spend more to increase **production** e.g. wage bills will increase
    - Increased costs result in **higher average prices**

### A Movement Along the SRAS Curve



Your notes

- Whenever there is a change in the **average price level (AP)** in an economy, there is a **movement along** the short run aggregate supply (SRAS) curve



*An increase or decrease in the average price level (AP) causes a movement along the short run aggregate supply (SRAS) curve leading to a contraction or expansion of the quantity supplied*

## Diagram Analysis

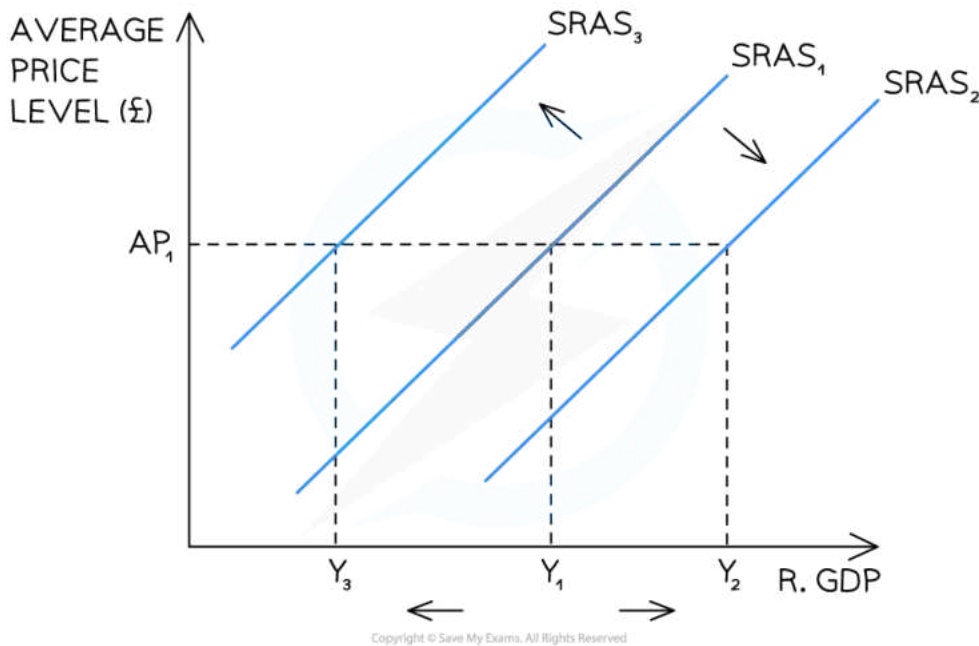
- An **increase in the AP (ceteris paribus)** from  $AP_1 \rightarrow AP_2$  leads to a **movement along the SRAS curve from A  $\rightarrow$  B**
  - There is an **expansion of real GDP** from  $Y_1 \rightarrow Y_2$ 
    - Y is the symbol used in macroeconomics to denote **national income or real GDP**
- A **decrease in the AP (ceteris paribus)** from  $AP_1 \rightarrow AP_3$  leads to a **movement along the SRAS curve from A  $\rightarrow$  C**
  - There is a **contraction of real GDP (output)** from  $Y_1 \rightarrow Y_3$

## Shifts of the Entire SRAS Curve



Your notes

- Whenever there is a **change** in the **non-price determinants of supply** in an economy (e.g. costs of production or productivity changes), there is a **shift of the entire SRAS curve**



*A shift in the entire short run aggregate supply (SRAS) curve occurs due to a change in one of the non-price determinants of supply*

## Diagram Analysis

- A **decrease** in costs or increase in **productivity** results in a **shift right** of the entire curve from **SRAS<sub>1</sub> → SRAS<sub>2</sub>**
  - At **every price level**, output and real GDP have **increased from Y<sub>1</sub> → Y<sub>2</sub>**
- An **increase** in costs or decrease in **productivity** results in a **shift left** of the entire curve from **SRAS<sub>1</sub> → SRAS<sub>3</sub>**
  - At **every price level**, output and real GDP have **decreased from Y<sub>1</sub> → Y<sub>3</sub>**

## The Non-price Determinants of the SRAS Curve

- There are two main factors that can **influence** the **short-run aggregate supply (SRAS)**. They are
  - Changes in costs** of raw materials and energy
  - Changes in **indirect taxes**

### Explaining the Influences on Short-run Aggregate Supply (SRAS)



Your notes

Change in Condition	Explanation	Impact on SRAS
<b>Changes to the costs of raw materials/energy</b>	<ul style="list-style-type: none"> <li>As the price of <b>input costs rise</b>, fewer goods/services can be <b>produced</b> with the same amount of money</li> </ul>	SRAS decreases - shifts left
	<ul style="list-style-type: none"> <li>As the price of <b>input costs decrease</b>, more goods/services can be <b>produced</b> with the same amount of money</li> <li>Factors which influence the input costs include wage rates, <b>interest rates</b>, government regulation and <b>exchange rates</b></li> </ul>	SRAS increases - shifts right
<b>Changes in indirect taxes</b>	<ul style="list-style-type: none"> <li>Indirect taxes represent an additional cost for firms</li> <li>Decreasing taxes = <b>decrease in costs</b> <b>Lower costs = more output</b></li> </ul>	SRAS increases - shifts right
	<ul style="list-style-type: none"> <li>Increasing taxes = <b>increase in costs</b> <b>Higher costs = less output</b></li> </ul>	SRAS decreases - shifts left

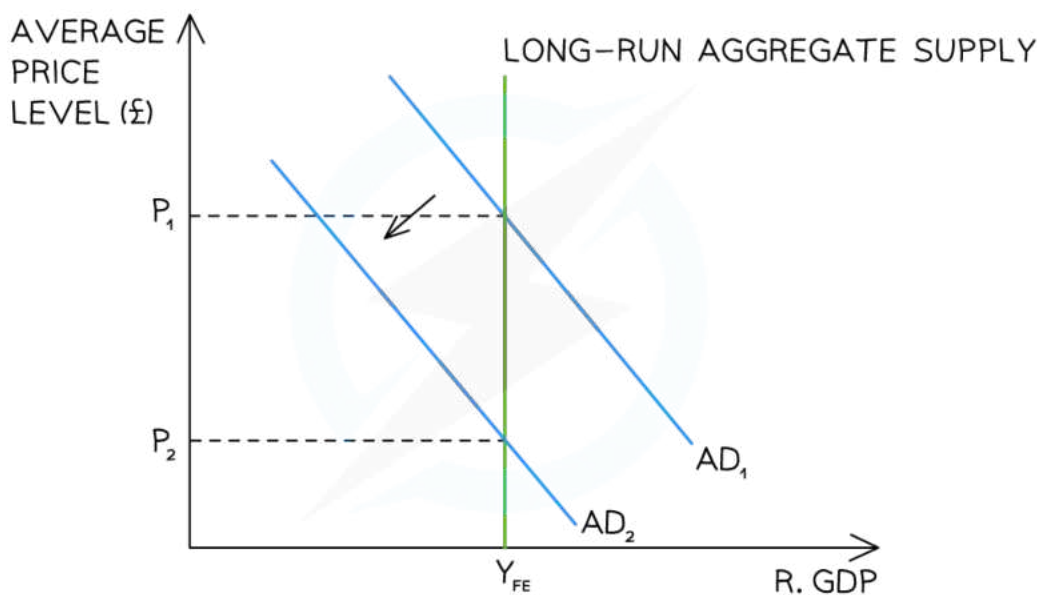


Your notes

### 3.2.3 Alternative Views of Aggregate Supply (AS)

## Monetarist/New Classical View of the Long-run Aggregate Supply (LRAS) Curve

- **Classical** and **Keynesian** economists have different views on the **long-run aggregate supply**
- Classical economists believe that the **LRAS is perfectly inelastic** (vertical) at a point of **full employment** ( $Y_{FE}$ ) of all available **resources**
  - This point corresponds to the maximum possible output on a **production possibilities curve (PPC)**
- The classical view believes that **in the long-run** an economy will always return to this full employment level of output ( $Y_{FE}$ ), **and all that will change in the long run will be the average price level**
  - During extreme periods of **economic growth** there can be an **inflationary gap** that develops
    - In the **long run** this will **self-correct** and return to the long-run level of output, but at a **higher average price level**
  - During slowdowns or **recessions** there can be a **recessionary gap** that develops
    - In the **long-run** this will **self-correct** and return to the long-run level of output, but at a **lower average price level**





Your notes

*The Classical View of long-run aggregate supply (LRAS) with a vertical aggregate supply curve at the full employment level of output ( $Y_{FE}$ )*

## Diagram Analysis

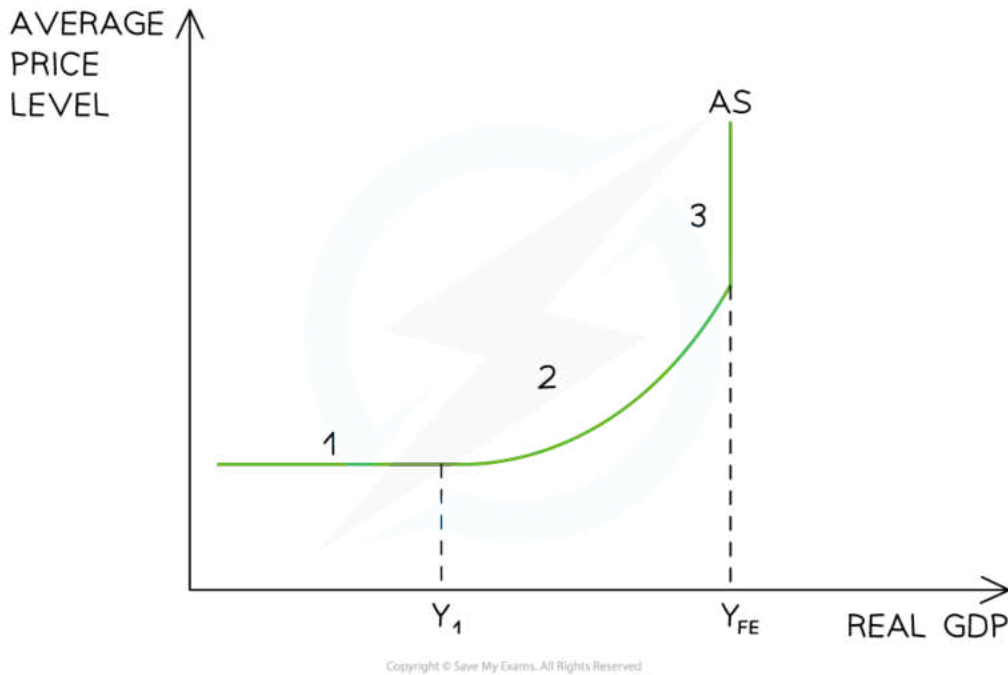
- Using **all available factors of production**, the long-term output of this economy (**LRAS**) **occurs at  $Y_{FE}$**
- The economy is initially in **equilibrium** at the intersection of  **$AD_1$  and LRAS ( $P_1, Y_{FE}$ )**
- A **slowdown** reduces output from  **$AD_1 \rightarrow AD_2$**  and creates a short term **recessionary gap**
- This **self corrects** in the **long term** and returns the economy to the **long-run equilibrium** at the intersection of  **$AD_2$  and LRAS ( $P_2, Y_{FE}$ )** – **a lower price** and back to the full employment level of output

## Keynesian View of the AS Curve

- Keynes believed that the **long-run aggregate supply curve (LRAS)** was more **L shaped**, having 3 distinct sections
1. **An elastic section** in which supply is elastic at lower levels of output as there is a lot of spare production capacity in the economy. **Struggling firms** will increase output **without raising prices**
  2. **A relatively price elastic section** in which firms are starting to bid with each other for available resources. Price levels begin to rise
  3. **A perfectly inelastic (vertical) section** at a point of **full employment ( $Y_{FE}$ )** of all available **resources**. The closer the economy gets to this point the more **price inflation** will occur as **firms compete for scarce resources**



Your notes



*The Keynesian View of long-run aggregate supply (LRAS) with a vertical aggregate supply curve at the full employment level of output ( $Y_{FE}$ ) becoming more elastic at lower levels of output*

## Diagram Analysis

- The **vertical portion** of the LRAS curve corresponds to the **classical view** of LRAS
  - The Keynesian view believes there is a **maximum level of possible output**
- The **LRAS curve becomes elastic** at a certain price level as prices cannot fall further
  - Possibly due to **minimum wage laws**, the existence of **trade unions**, or long-term **employment contracts** preventing wage decreases
- **Real output national equilibrium** can occur at any **level of output**
- The **Keynesian view** believes that an economy **will not** always self-correct and **return to the full employment level of output ( $Y_{FE}$ )**
  - It can **get stuck** at an equilibrium well **below the full employment level** of output e.g. Great Depression
- The **Keynesian view** believes that there is a **role for the government to increase its expenditure** so as to **shift aggregate demand** and change the confidence (**animal spirits**) in the economy





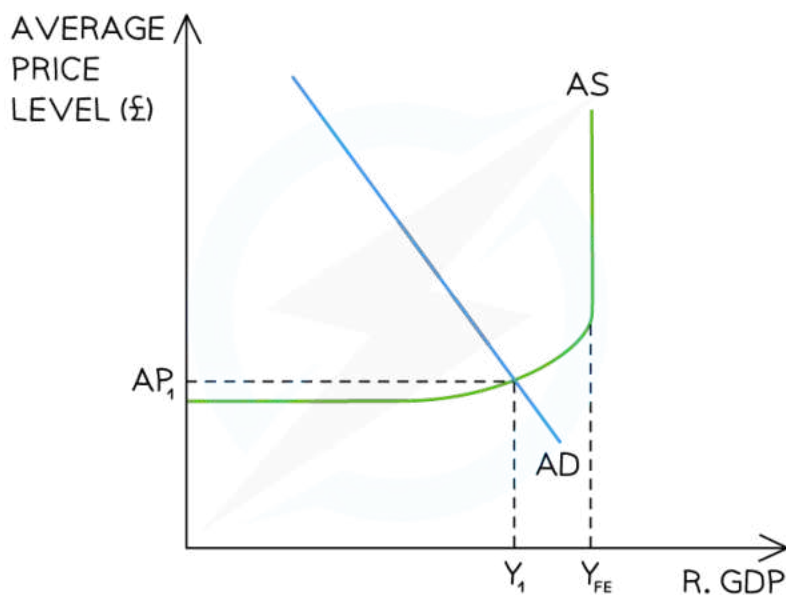
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## Inflationary & Deflationary Output Gaps

- An **output gap** is the difference between the **actual level** of output (**real GDP**) and the **maximum potential** level of output
- An **inflationary output gap** occurs when the real GDP is greater than the potential real GDP
- A **deflationary (recessionary) output gap** occurs when the real GDP is less than the potential real GDP
  - There is **spare capacity** in the economy to produce more goods/services that are being produced
- It is **difficult to measure output gaps** accurately
  - This is because it is hard to know exactly what the **maximum productive potential** of an economy is
  - **Rapidly rising prices** can indicate a **positive gap** is developing
  - **Rising unemployment** and **slowdown** in economic growth can indicate that a **negative gap is increasing**

### A deflationary (recessionary) output gap

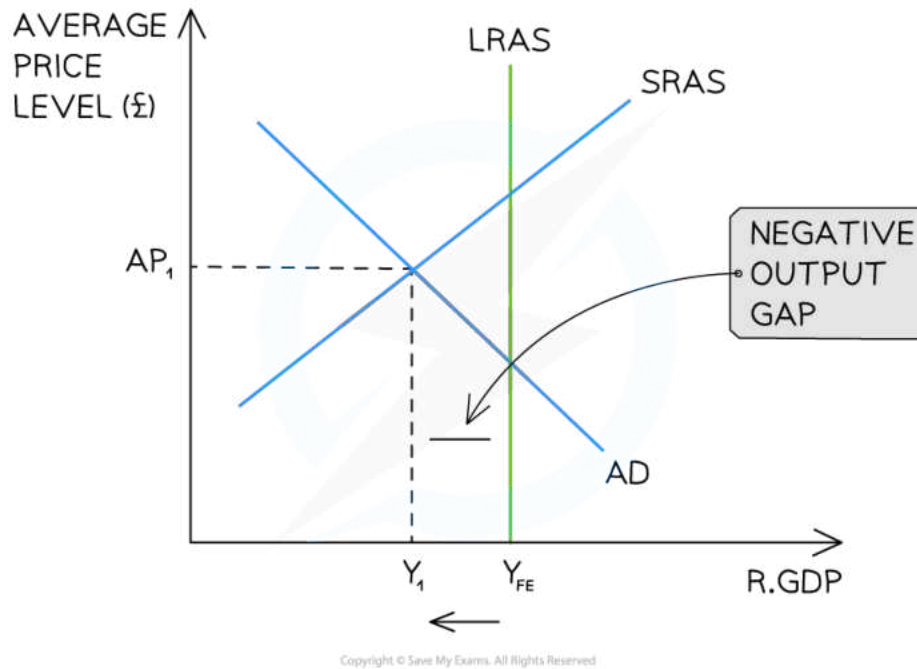
- A deflationary gap can be illustrated using either a Classical or Keynesian diagram



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*Keynesian (top) and Classical (bottom) diagrams illustrating an economy that has a deflationary output gap ( $Y_1 - Y_{FE}$ ) and is currently producing less than its potential output*

## Diagram Analysis

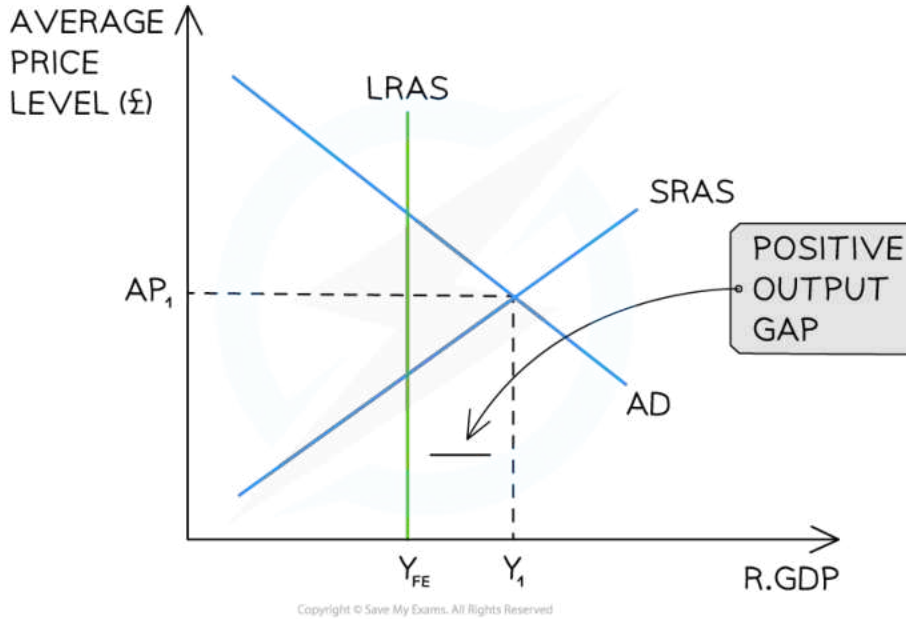
- The potential output of this economy is at  $Y_{FE}$
- The economy is in a **short-run equilibrium** at  $AP_1 Y_1$ 
  - A negative output gap exists at  $Y_{FE} - Y_1$ 
    - This effectively gives the economy additional **spare capacity** in the short-term
  - One cause of this may be that **AD has recently decreased** due to a fall in consumption
- The **Classical view** is that the output will return to  $Y_{FE}$  in the long-run, but at a **lower average price level**
- The **Keynesian view** is that an economy may be stuck in a **negative output gap** for a long period of time

## An inflationary output gap

- An inflationary gap can be illustrated using either a Classical or Keynesian diagram



Your notes



*A Classical illustration of an inflationary output gap ( $Y_1 - Y_{FE}$ ) where the economy is currently producing more than its potential output*

## Diagram Analysis

- The **potential output** of this economy is at  $Y_{FE}$
- The economy is in a **short-run equilibrium** at  $AP_1Y_1$ 
  - A positive output gap exists at  $Y_1 - Y_{FE}$ 
    - This economy is producing beyond its **capacity** in the short-term
  - One cause of this may be that workers are willing to **work overtime** once full capacity is reached
    - It is **not sustainable** and the **Classical view** is that the output will return to  $Y_{FE}$ , but at a **higher price level**



## Examiner Tips and Tricks

When writing about an inflationary output gap, students often confuse it with the concept of inflation (an increase in the average price level). Output gaps focus on **output**, not price levels. An inflationary output gap means that the economy is producing beyond its full employment **level of output**.



Your notes



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### 3.2.4 Shifts of the Long-Run Aggregate Supply (LRAS)

## Factors that Shift the LRAS

- Classical economists believe that the long-run aggregate supply (LRAS) can increase in the **long-run**
- Keynesian economists believe that aggregate supply can increase in the **long-term**
- The following factors will shift the entire Classical LRAS curve, or the Keynesian AS curve outwards, thus increasing the potential output of the economy. This corresponds to an **outward or inward shift** on the **production possibilities curve** for an economy
  1. **Changes in the quality or quantity of the factors of production:** Any factor that increases the quantity or quality of a **factor of production** will increase the productive potential of an economy e.g. improving the skills of workers or changing the migration policies so that there is an increase the quantity of labour
  2. **Technological advances:** these often improve the quality of the factors of production e.g. development of metal alloys
  3. **Efficiency improvements:** process innovation often results in **productivity improvement** e.g. moving from labour intensive car production to automated car production
  4. **Changes in institutions:** increasing financial institutions can result in more access to finance and help to increase the potential supply. Creating and implementing new legislation (laws) can make it easier for new firms to enter markets thus increasing supply e.g. implementation of competition policy



### Examiner Tips and Tricks

You will frequently be examined on your understanding of factors that shift the **short-run aggregate supply (SRAS)** curve and **long-run aggregate supply (LRAS)** curve.

Make sure you know the difference and remember that **LRAS factors will shift the entire LRAS curve to the right**, representing an increase in the potential output of the economy. Changes to SRAS do not change the potential output of the economy.

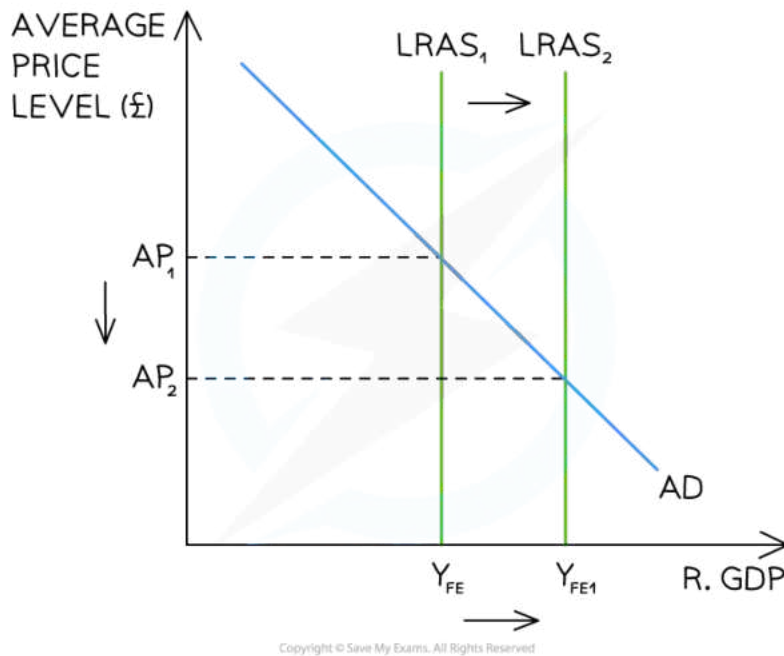
## Diagrammatic Illustration of Long-run Shifts

### 1. Changes to LRAS in the Classical Model

- Changes to any of the **determinants of LRAS** will change the long-run productive potential of the economy



Your notes



*The Classical view of an increase in the long-run aggregate supply (LRAS) of an economy leading to lower average price levels*

## Diagram Analysis

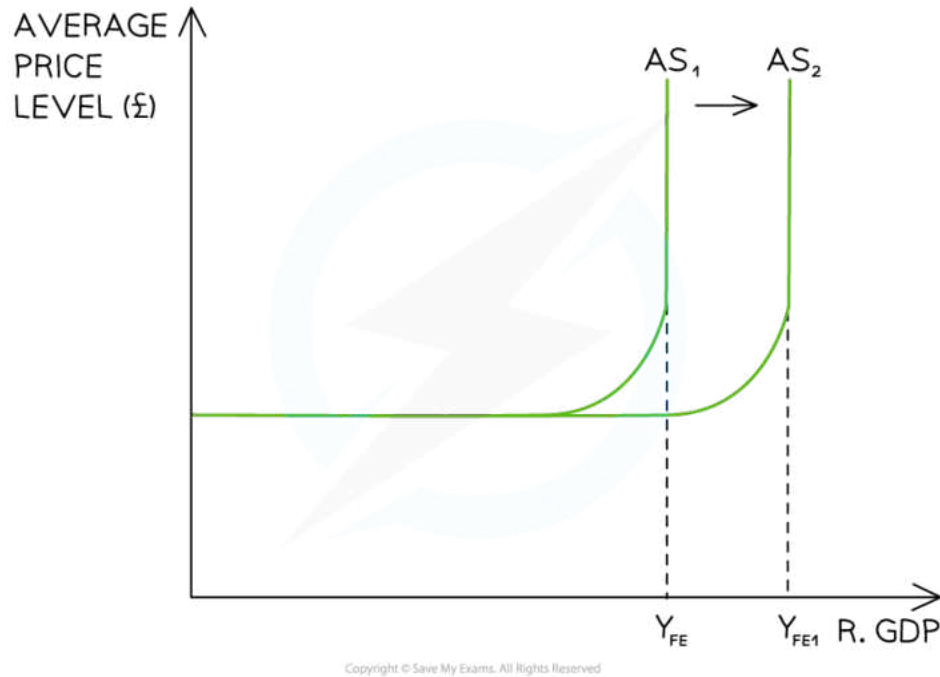
- The **initial potential output** of this economy is seen at  $Y_{FE}$ 
  - The economy is in **equilibrium** at  $AP_1 Y_{FE}$
- A **change to the education** level in the economy can **increase the quality of labour** and shift the LRAS to the right from  $LRAS_1 \rightarrow LRAS_2$ 
  - There is now an increased level of potential output in the economy at  $Y_{FE1}$
- The **extra supply** in the economy **allows prices to fall** and **output to increase** resulting in a new equilibrium at  $AP_2 Y_{FE1}$

## 2. Changes to AS in the Keynesian Model

- As with the **Classical model**, changes to any of the **determinants of AS** will change the long term productive potential of the economy



Your notes



*The Keynesian view of an increase in the long-term aggregate supply (LRAS) of an economy*

## Diagram Analysis

- The **initial potential output** of this economy is seen at  $Y_{FE}$
- A **change to the immigration policy** can **increase the quantity of labour** and shift the AS to the right from  $AS_1 \rightarrow AS_2$ 
  - There is now an increased level of possible output in the economy  $Y_{FE1}$

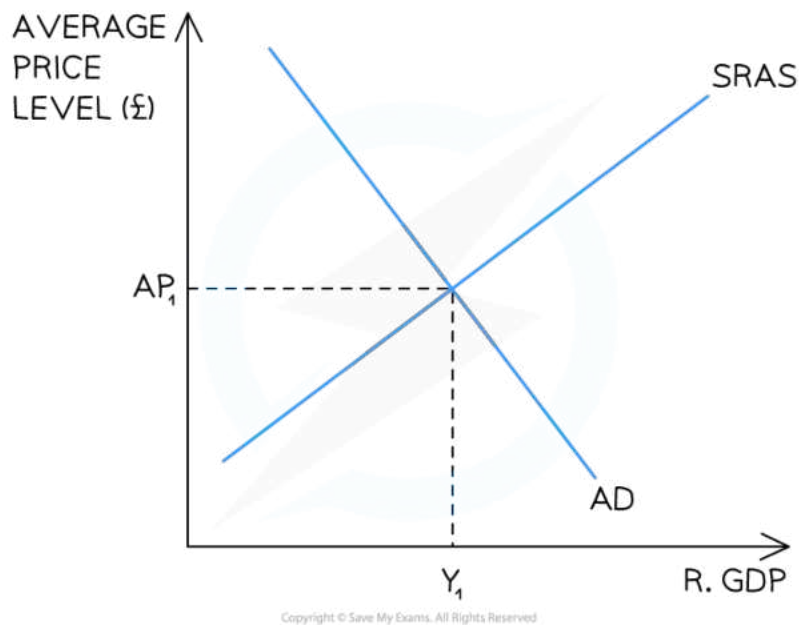


Your notes

### 3.2.5 Macroeconomic Equilibrium

## Short-run Equilibrium

- Real national output equilibrium occurs where **aggregate demand (AD)** intersects with **short-run aggregate supply (SRAS)**



*A diagram showing the Classical short-run equilibrium in an economy resulting in an equilibrium price of  $AP_1$  and real output of  $Y_1$*

- According to **classical theory**, this economy is in **short run equilibrium at  $AP_1Y_1$**
- Any changes to the components of **AD** will cause the AD curve to shift left or right **creating a new short-run equilibrium**
- Any changes to the **non-price determinants of SRAS** will shift the SRAS curve left or right **creating a new short-run equilibrium**

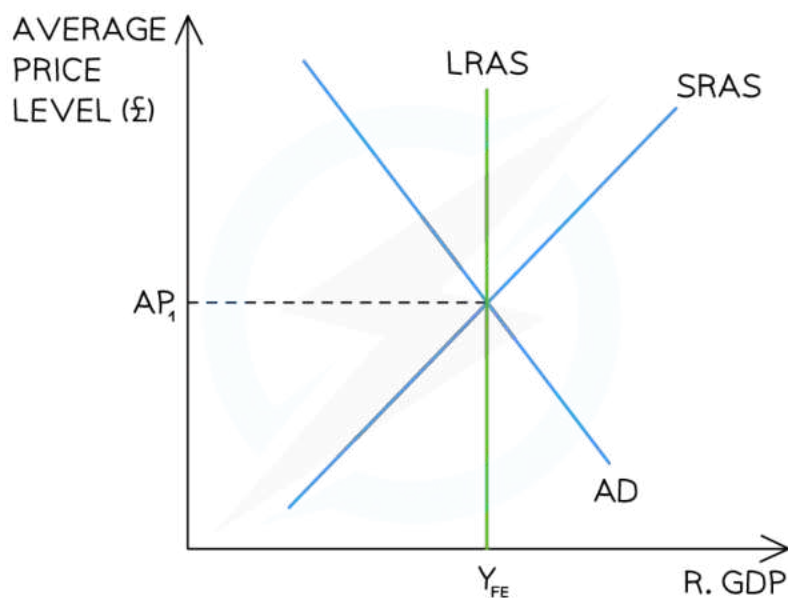
## Long-run Equilibrium in the Monetarist/New Classical Model





Your notes

- **Classical** and **Keynesian** economists have different views on the **long-run equilibrium** of real national output
- **Classical economists** believe that the economy will **always return to its full potential level** of output and all that will change in the long-run, is the **average price level**
- $Y_{FE}$  is considered to be equal to the **natural rate of unemployment** in an economy



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*A diagram that shows the Classical view of long-run equilibrium which occurs at the intersection of long-run aggregate supply (LRAS), short-run aggregate supply (SRAS) and aggregate demand (AD)*

## Diagram Analysis

- The **LRAS** curve demonstrates the **maximum possible output** of an economy using all of its **scarce resources**
- The **SRAS intersects with AD** at the LRAS curve
- This economy is producing at the **full employment level** of output ( $Y_{FE}$ )
- The **average price level** at  $Y_{FE}$  is  $AP_1$

## The Classical Adjustment Process (Self-correcting)

- **Classical economists** believe that in the long run the economy will **always return to its full potential level** of output and all that will change is the **average price level**

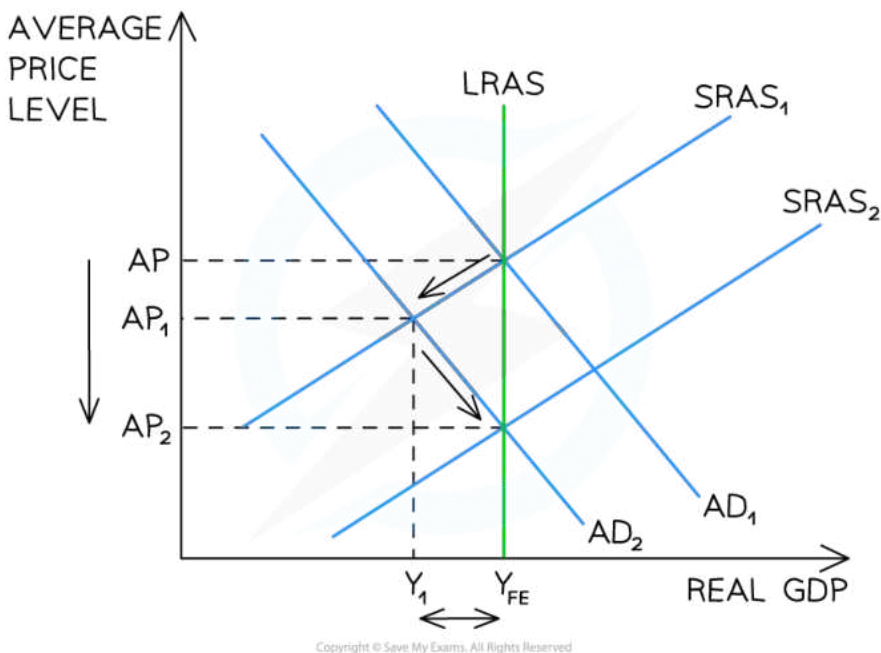
- This is also referred to as the **self-correcting mechanism**



Your notes

## Automatic adjustment from a deflationary output gap

- A **deflationary (recessionary) output gap** occurs when the real GDP is less than the potential real GDP



*Aggregate demand (AD) has shifted left causing a deflationary gap, which in the long-run will self-correct to  $Y_{FE}$  but at a lower average price level ( $AP_2$ )*

## Correction Process

1. Initial long-run equilibrium is at  $AP$   $Y_{FE}$
2. AD shifts left from  $AD \rightarrow AD_1$ , possibly due to the onset of a **recession**
3. Output falls from  $Y_{FE} \rightarrow Y_1$  and price levels fall from  $AP \rightarrow AP_1$
4. Due to the fall in output, firms **lay off workers**
5. Unemployed workers are now willing to work for **lower wages** and this **reduces the costs of production** which causes the SRAS curve to shift right from  $SRAS_1 \rightarrow SRAS_2$
6. A **new long-run equilibrium** is formed at  $AP_2$   $Y_{FE}$

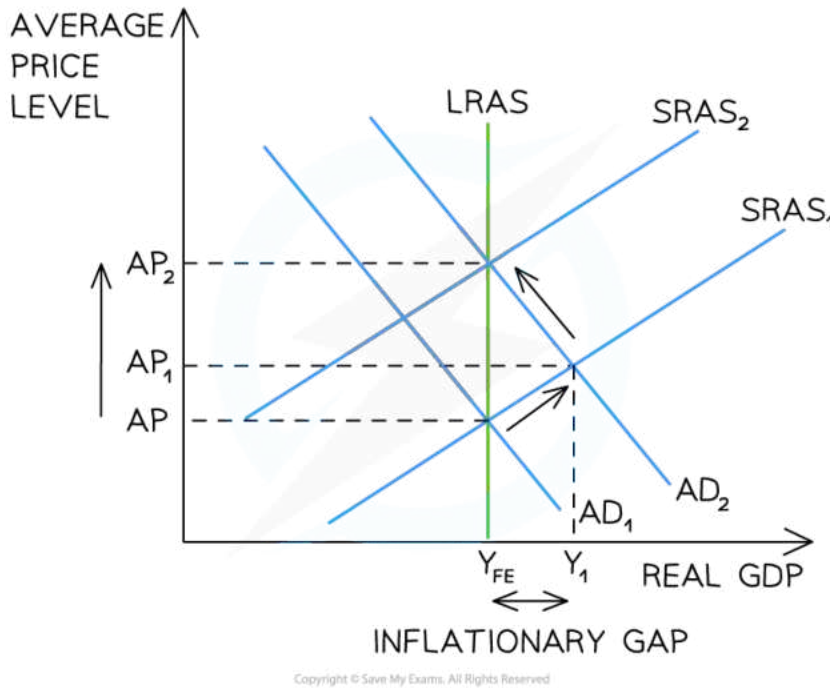
7. The economy is back to the full employment level of output ( $Y_{FE}$ ), but at a **lower average price**



Your notes

## Automatic adjustment from an inflationary output gap

- An **inflationary output gap** occurs when real GDP is greater than the potential real GDP



*Aggregate demand (AD) has shifted right causing an inflationary gap, which in the long-run will self-correct to  $Y_{FE}$  but at a higher average price level ( $AP_2$ )*

## Correction Process

- Initial long-run equilibrium is at  $AP$   $Y_{FE}$
- AD shifts right from  $AD_1 \rightarrow AD_2$ , possibly due to rapid **expansion of the money supply**
- Output rises from  $Y_{FE} \rightarrow Y_1$  and price levels rise from  $AP \rightarrow AP_1$
- Due to the increase in average prices (inflation), workers demand **higher wages**
- Higher wages** increase **the costs of production** which causes the SRAS curve to shift left from  $SRAS_1 \rightarrow SRAS_2$
- A new long-run equilibrium is formed at  $AP_2$   $Y_{FE}$

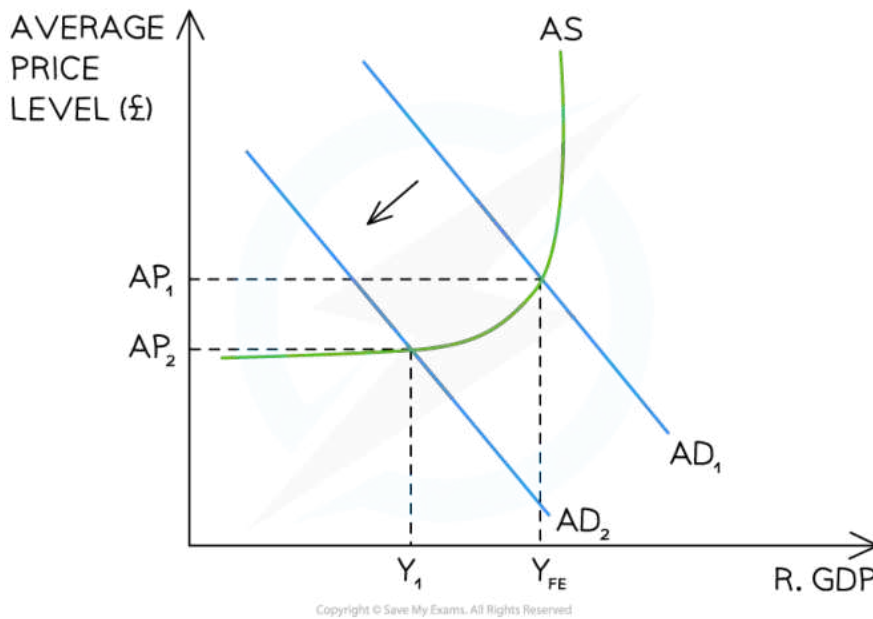


Your notes

7. The economy is back to the **full employment** level of output ( $Y_{FE}$ ), but at a **higher average price**

## Equilibrium in the Keynesian Model

- **Keynesian economists** believe that the economy can be in **long term equilibrium at any level of output**
- The **Keynesian view** believes that an economy **will not** always self-correct and **return to the full employment level of output ( $Y_{FE}$ )**
  - It can **get stuck** at an equilibrium well **below the full employment level** of output e.g. Great Depression
- The **Keynesian view** believes that there is **role for the government to increase its expenditure** so as to **shift aggregate demand** and change the negative 'animal spirits' in the economy



*A diagram that shows the Keynesian View of aggregate supply (AS) with a vertical aggregate supply curve at the full employment level of output ( $Y_{FE}$ ) becoming more elastic at lower levels of output*

### Diagram Analysis

- Using **all available factors of production**, the long-term output of this economy occurs at  $Y_{FE}$
- The economy is initially in **equilibrium** at the intersection of  $AD_1$  and AS ( $AP_1 Y_{FE}$ )



Your notes

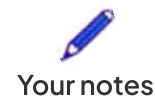
- A **slowdown** reduces aggregate demand from  $AD_1 \rightarrow AD_2$  and creates a **recessionary gap equal to  $Y_{FE} - Y_1$**
- The economy may reach a point where **average prices stop falling ( $AP_2$ )**, but output continues to fall
  - Prices may be blocked from falling further due to **minimum wage laws**, the existence of **trade unions**, or long-term **employment contracts** preventing wage decreases
- This economy **may not self-correct to  $Y_{FE}$**  for years
- The **low output** leads to **high unemployment** and **low confidence** in the economy
  - This stops further **investment** and further **reduces consumption**
- Keynes argued that this was where **governments needed to intervene** with significant **expenditure** e.g. Roosevelt's New Deal; response to financial crisis of 2008

## Assumptions & Implications of the two Models

- Each model has strengths and weaknesses
- It has been said that free market fans like **Classical thinking** when an economy is doing well but very quickly switch to a Keynesian way of thought during severe recessions as they seek **government bail outs**
- The Economist Mariana Mazzucato sums it up with the phrase, '*Capitalists like to privatise their profits and socialise their losses*'

### The Assumptions & Implications of Classical Thinking

Assumptions	Implications
<b>Wages are flexible</b>	<ul style="list-style-type: none"> <li>▪ Markets self-correct to <math>Y_{FE}</math> in the long run due to the fact that <b>wages can easily rise or fall</b> so as to change costs of production</li> <li>▪ The self-correction is based on automatic short-run supply side changes and there is no need for <b>government intervention</b></li> </ul>
<b>Any deviation from <math>Y_{FE}</math> is temporary</b>	<ul style="list-style-type: none"> <li>▪ There may be short periods of unemployment when a <b>recessionary gap</b> occurs, however markets will return to <math>Y_{FE}</math> which corresponds to the <b>natural rate of unemployment (NRU)</b> for an economy</li> </ul>



<p><b>Demand-side policies are less effective than supply-side policies in generating economic growth</b></p>	<ul style="list-style-type: none"> <li>▪ Economic growth is generated by increasing the productive capacity of the economy</li> <li>▪ This thinking follows <b>Says' Law</b></li> <li>▪ Government intervention should focus on increasing the supply-side of an economy</li> </ul>
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### The Assumptions & Implications of Keynesian Thinking

Assumptions	Implications
<p><b>'In the long-run we are all dead'</b></p>	<ul style="list-style-type: none"> <li>▪ Keynes explained that the idea of markets <b>self-correcting in the long-run</b> was flawed in that the long-run could be a very long period of time indeed</li> <li>▪ The consequences of <b>severe recessionary gaps</b> and the unemployment they cause can be significant, lasting for generations</li> </ul>
<p><b>Wages can be inflexible 'sticky' downwards</b></p>	<ul style="list-style-type: none"> <li>▪ Markets will reach a point where self-correction as a result of <b>falling wages</b> is no longer viable</li> <li>▪ Workers will reach a point where they are no longer willing to accept lower wages</li> <li>▪ Wages may be blocked from falling further due to <b>minimum wage laws</b>, the existence of <b>trade unions</b>, or long-term <b>employment contracts</b> preventing wage decreases</li> </ul>
<p><b>Governments have to intervene to break the 'negative animal spirits'</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Animal spirits</i> refers to the human emotions which drive financial decisions during times of uncertainty or market volatility</li> <li>▪ If the emotions are gloomy about the <b>economic outlook</b>, then gloominess will continue</li> <li>▪ This was the situation in the <b>Great Depression</b> and Keynes advocated that Government spending was required to change the mood in the economy and to help rebuild <b>business and consumer confidence</b></li> <li>▪ Once governments had intervened, the <b>self-correcting mechanism</b> would begin to function again</li> </ul>