OCR – A Level Economics

Component 2 – Macroeconomics

6. Aggregate demand and aggregate supply

Revision Notes

Contents

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6.1 The circular flow of income

National income

National income is the total value of everything a country produces (called **output**) over a period of time usually a year.

Think of it like the country's "annual salary."

This output is made using:

- **Physical capital** – machines, tools, and factories
- **Human capital** – the workers and their skills

👉 **Income is a flow**, meaning it happens over time (like your monthly wages), while **wealth** is the total assets you've built up (like your house or savings).

📊 **Nominal vs Real GDP – What's the Difference?**

We measure national income using **GDP (Gross Domestic Product)**, which is the value of all the goods and services a country produces.

There are two ways to measure GDP:

🟢 **Nominal GDP**

This is the total value **without adjusting for inflation**.
It's like saying, "I earned £100 this year" without considering that prices have gone up.

- For example: If Nominal GDP = £100 billion, that's just the figure. No tweaks.
- But prices might have risen by 5% due to inflation, meaning that money buys less now.

🔵 **Real GDP**

This is **adjusted for inflation**, so it tells you the real value of what's produced.
It's more useful for comparing different years.

- E.g. If Nominal GDP is £100bn and inflation is 5%, then **Real GDP = £95bn**.

6.1 The circular flow of income

National income

📈 **Why National Income Matters: Real Income = Real Insight**

Real national income (real GDP) is one of the best ways to check how healthy an economy is.

- If **real income is rising**, the economy is probably growing, and people might be better off.
    - This usually means the **standard of living** is improving too (people can afford more stuff).
- But if **real income is falling**, especially during a **recession** (a period when the economy shrinks), people may be worse off and spending less.
- The **rate of change** in national income shows us how fast a country is growing (or not).
- Economists also use these figures to **compare countries** like checking which country is doing better or improving faster.

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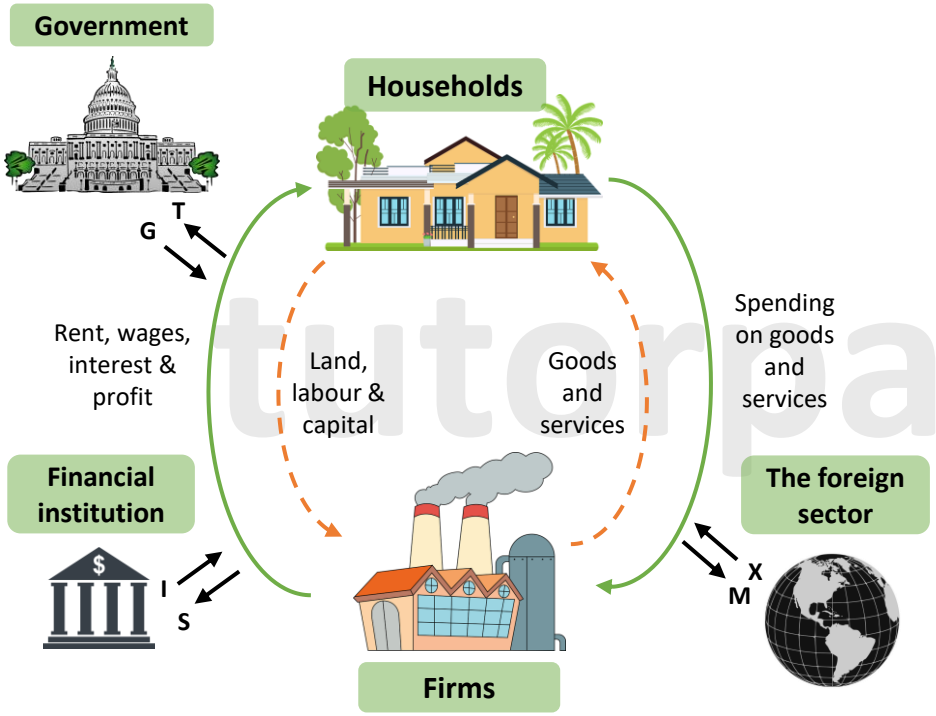
6.1 The circular flow of income

The circular flow of income

The **circular flow of income** is a model that shows how money moves around an economy, connecting households (people) and firms (businesses).



6.1 The circular flow of income

The circular flow of income

The Basic Model: A Two-Sector Economy

At its simplest, the economy has **two key players**: **households** (people) and **firms** (businesses that make goods and services).

- **Households** own all the resources, land, labour, and capital. They "lend" these to firms in exchange for income like **wages** (for work), **rent** (for land), **interest** (for savings), and **profits** (for business ownership).
- **Firms** use these resources to produce goods and services, which households then **buy using their income**.
- **Money flows one way** (households paying for goods/services), while **resources flow the other way** (households supplying labour, capital, etc.).
- The result? A cycle where **national output (goods/services produced) = national expenditure (money spent) = national income (money earned by households).**

Expanding the Model: A More Realistic Economy

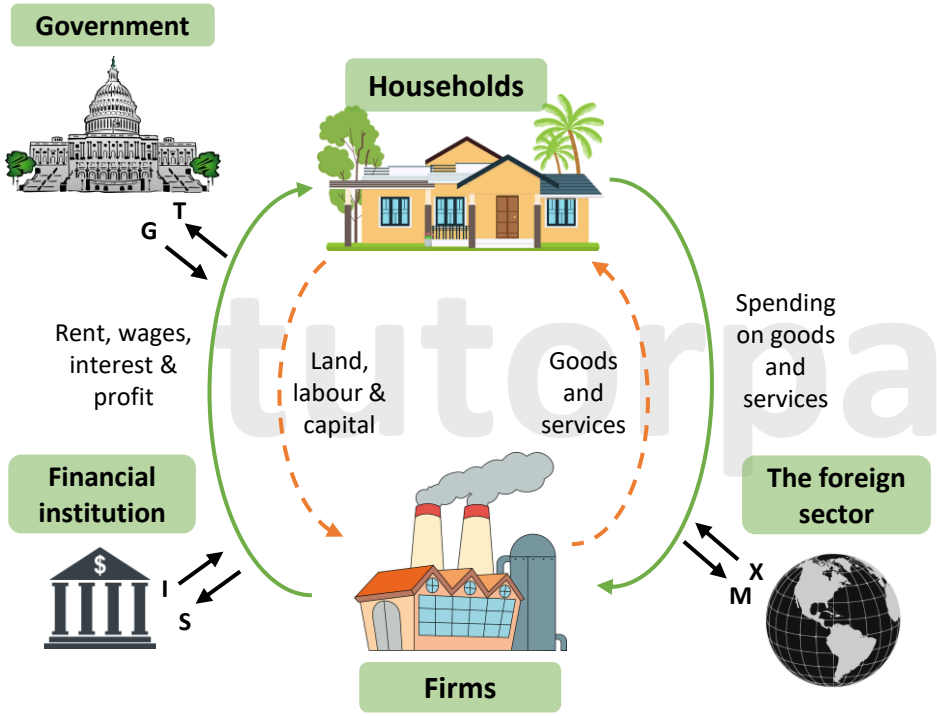
A two-sector economy is too simple, so we add other key players to reflect the real world.

1 The Government

- The government collects **taxes (T)** from households and businesses.
- It then **spends (G)** money on public services like education, healthcare, and infrastructure.
- If the government spends more than it collects, it increases the overall flow of money in the economy.

6.1 The circular flow of income

The circular flow of income



6.1 The circular flow of income

The circular flow of income

2 Financial Institutions

- **Banks and financial markets** act as middlemen in the economy.
- They **inject money** by offering **investment (I)** to businesses for growth.
- They also **remove money** when people choose to **save (S)** rather than spend.

3 Foreign Trade

- The economy is **open**, meaning it interacts with the rest of the world.
- **Exports (X)** – When foreigners buy British goods, money **flows into** the economy.
- **Imports (M)** – When British people buy foreign goods, money **flows out** of the economy.
- The difference between exports and imports is called the **balance of trade**.

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6.1 The circular flow of income

The circular flow of income

As you know national income is the total amount of money earned by everyone in a country (all workers, businesses, and the government) over a period of time (usually a year).

Economists can measure national income in **three different ways:**

1 Expenditure Method – What we spend

This method adds up **everything people, businesses, and governments spend** on final goods and services.

The formula:
C + I + G + (X – M)

- **C** = Consumption (e.g. what households spend on groceries or Netflix)
- **I** = Investment (e.g. what businesses spend on new equipment or factories)
- **G** = Government spending (e.g. money spent on schools, police, and roads)
- **X – M** = Exports minus imports (we count stuff we sell to other countries and subtract what we buy from them)

🎯 Example: If you buy a pizza, that's consumption. If Pizza Planet buys a new oven, that's investment.

2 Income Method – What we earn

This method adds up **all the income** people earn from producing those goods and services:

- Wages and salaries (e.g. what workers get paid)
- Rent (e.g. landlords earn money from people using their property)
- Interest (e.g. banks earn money from lending out savings)
- Profits (e.g. what businesses make after paying costs)

🎯 Example: When a baker gets paid, the landlord collects rent, and the bakery earns a profit, that's income.

6.1 The circular flow of income

The circular flow of income

3 Output Method – What we produce

This approach adds up the **value of all goods and services produced** in the economy (without double-counting anything).

It's like saying: "Let's count all the pizzas, laptops, clothes, haircuts, and lessons we've made or given this year."

⚠️ Just be careful not to count things twice, for example, don't count the steel and the car if the steel was used to make the car.

🎯 Example: If a school provides education worth £5 million and a factory makes £10 million in goods, the output is £15 million.

🔁 **Comparing the Methods – income = output = expenditure**

All three methods should, in theory, give you the **same total**, because:

- **Earnings** (income) equals
- **Production** (output) equals
- **Spending** (expenditure)

👀 But in real life, they often differ slightly due to errors, missing data, or things like cash-in-hand work that go unrecorded.

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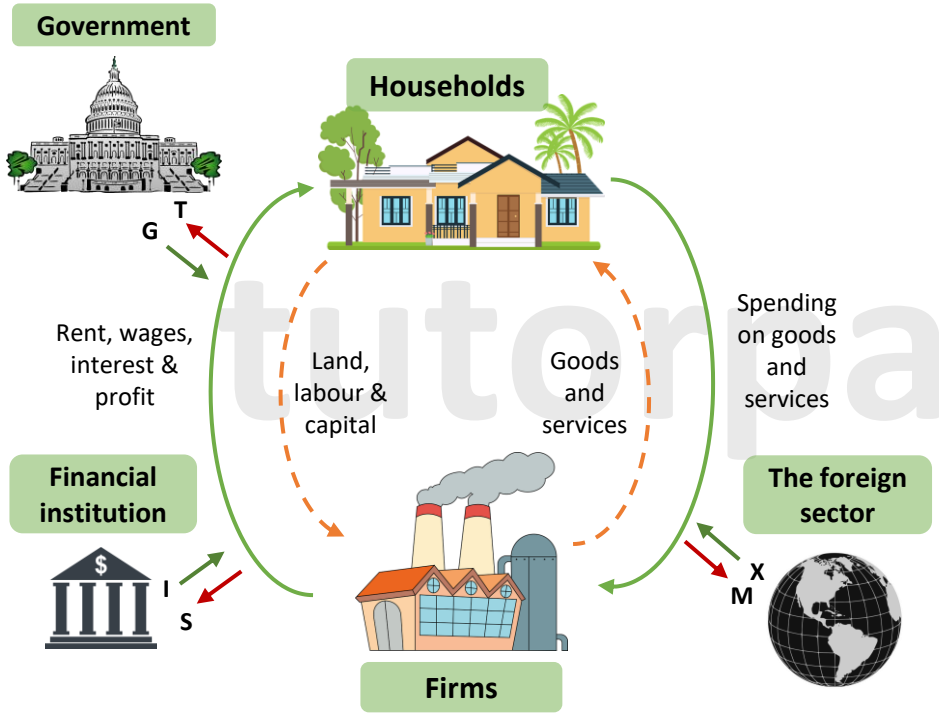
6.1 The circular flow of income

Impact of injections and withdrawals

Think of the economy like a giant bathtub. Money flows in (injections), filling it up, and money flows out (withdrawals), draining it. The size of the economy (the water level) depends on how much is coming in versus going out.



6.1 The circular flow of income

Impact of injections and withdrawals

Injections (Money Inflows 💰)

These increase the flow of income and make the economy grow:

- **Government spending (G):** When the government spends on things like roads, hospitals, and schools, it pumps money into businesses and wages.
- **Investment (I):** Businesses spending on new machinery, factories, or technology adds money into the economy.
- **Exports (X):** When foreign buyers purchase UK goods and services, money flows into the economy.

Withdrawals or Leakages (Money Outflows 💸)

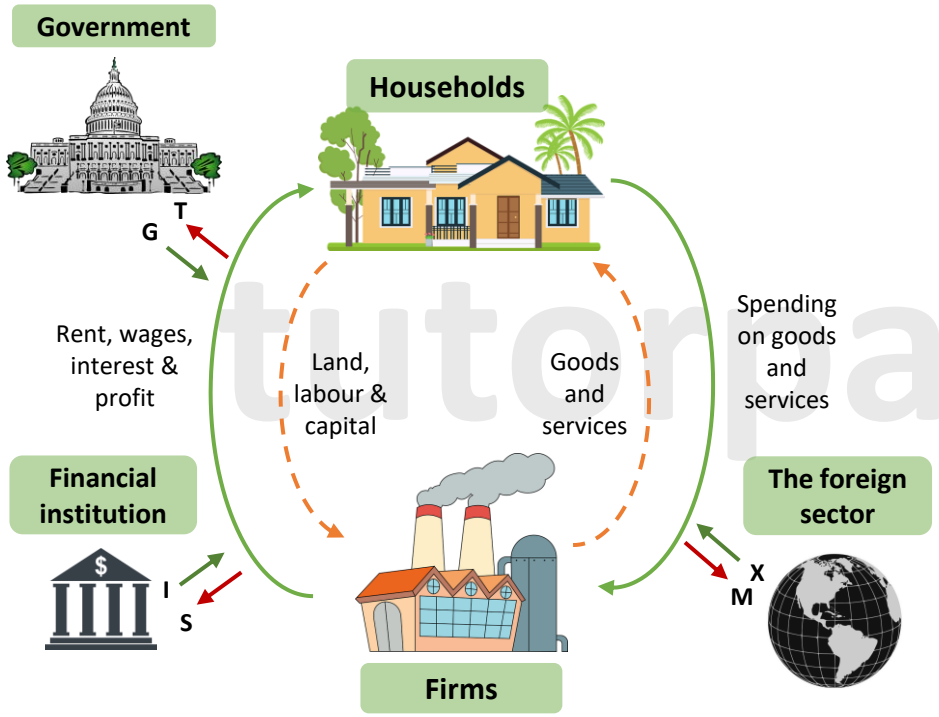
- These reduce the flow of income and slow down economic growth:
- **Savings (S):** If households and businesses save instead of spending, less money circulates in the economy.
- **Taxation (T):** When the government collects taxes, it removes money from consumers and businesses (unless it reinjects it through spending).
- **Imports (M):** When people and businesses buy goods from abroad, money leaves the UK economy.

Why Does This Matter?

- If **injections > withdrawals**, the economy **grows** (GDP increases).
- If **withdrawals > injections**, the economy **shrinks** (GDP falls).

6.1 The circular flow of income

Impact of injections and withdrawals



6.1 The circular flow of income

Impact of injections and withdrawals

The Multiplier Effect

This is like a ripple effect. If the government spends £1 billion on new roads, it pays construction workers, who then spend their wages on groceries, rent, and entertainment. This leads to economic growth that exceeds the initial amount of the injection.

Factors That Influence the Circular Flow of Income

- **Interest rates:** High rates encourage saving (a withdrawal), while low rates encourage borrowing and spending (an injection).
- **Government policy:** Increased taxes reduce disposable income (withdrawal), while increased government spending boosts economic activity (injection).
- **Consumer confidence:** If people feel secure in their jobs, they spend more, keeping money flowing in the economy. If they're worried about a recession, they save instead, slowing things down.

6.1 The circular flow of income

Equilibrium and full employment income

💼 **What is Equilibrium National Income?**

Again, imagine an economy like a giant bathtub. **Water flowing in** represents **injections** (like investment, government spending, and exports), and **water flowing out** is **withdrawals** (like savings, taxes, and imports).

Equilibrium national income is when the water level stays steady meaning **injections = withdrawals**. The economy isn't overflowing or drying up.

💡 In fancier terms:

- It's the level of national income where **aggregate demand** (total spending in the economy) = **aggregate supply** (total goods and services produced).

🎯 Example:
If people save £100 million and that same amount is invested back into the economy by businesses or government, the economy stays balanced; no boom, no bust.

👷 **What is Full Employment?**

Full employment doesn't mean **zero unemployment** (some people are always switching jobs or taking breaks), but it means the economy is working at **maximum capacity**.

In this state (all resources including workers, machines, and factories) are being used efficiently. There's **no spare capacity**.

💡 It's when the economy is on its **Production Possibility Frontier (PPF);** a curve that shows the most output possible with current resources.

🎯 Example:
Think of a bakery. Full employment is when every oven is baking, every baker is mixing, and no ingredients are sitting unused. If they work any harder, they'll burn out.

6.1 The circular flow of income

Equilibrium and full employment income

In Summary:

Concept	Meaning
Equilibrium Income	Where spending = production (no leakages or extra injections)
Full Employment	Economy working at full speed, using all resources efficiently
Key Formula	**Aggregate Demand = Aggregate Supply**

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6.2 Aggregate Demand

Components of AD: C+I+G+(X-M)

Aggregate demand (AD) is **the total demand for all goods and services** in an economy at any given **price level**.

How is AD Calculated?

We calculate AD using the **expenditure approach**, which adds up everything spent in the economy:

AD = Consumption (C) + Investment (I) + Government Spending (G) + (Exports (X) – Imports (M))

or simply:

-
AD = C + I + G + (X – M)

Breaking Down the Components of AD

1. **Consumption (C)** – This is **everything consumers spend on goods and services**. Whether it's groceries, clothes, or a new laptop, if a household buys it, it falls under consumption.
2. **Investment (I)** – This is **what businesses spend on capital goods** (things that help them produce more in the future, like machines, buildings, or technology).
3. **Government Spending (G)** – This is **what the government spends money on** to keep things running, such as public sector wages, education, and healthcare.
    - **Important:** It **doesn't** include **transfer payments** (like pensions or benefits), because these just move money around rather than creating new economic activity.
4. **Net Exports (X – M)** – This is the **difference between what a country sells to other countries (exports) and what it buys from them (imports)**.
    - If exports are greater than imports → **Trade surplus**
    - If imports are greater than exports → **Trade deficit**

6.2 Aggregate Demand

Components of AD: C+I+G+(X-M)

Why Does AD Matter?

If AD **increases**, the economy **grows** (more spending = more business activity). If AD **falls**, the economy **shrinks**, which could lead to job losses and lower incomes.

How Important is Each Component?

Different countries rely on different parts of AD. For example:

- In **South Korea**, **investment** plays a huge role in economic growth (big spending on technology and manufacturing).
- In **Brazil**, **government spending** is a major part of AD due to large public welfare programs.
- The breakdown looks like this for various countries:
    - **Consumption: Around 60%** (People love spending.)
    - **Investment: 14-20%**
    - **Government Spending: 18-25%**
    - **Net Exports – Around 1%**

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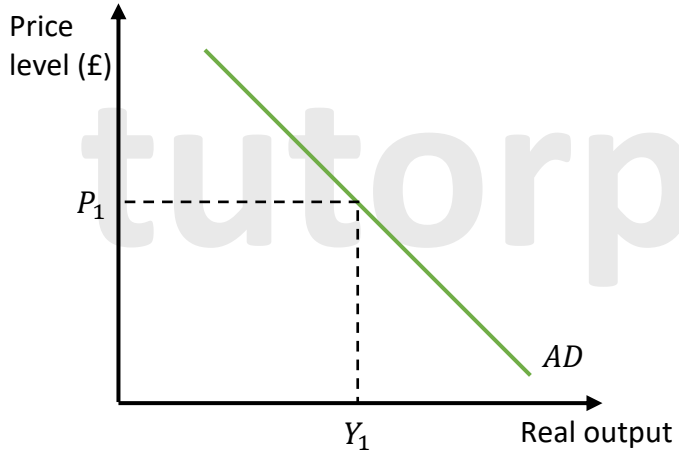
6.2 Aggregate Demand

The AD curve

The **Aggregate Demand (AD) curve** shows the relationship between the **average price level** (how expensive things are) and the **total output** (real output/GDP) in an economy.

🛒 **Think of it like this:** When things become cheaper, people buy more, businesses invest more, and exports rise. When prices go up, the opposite happens, spending and investment slow down.



6.2 Aggregate Demand

The AD curve

Why is the AD Curve Downward Sloping?

The AD curve slopes **downward** because when prices fall, demand **increases**. This happens for three main reasons:

1) Interest Rate Effect 📉

- When the price level (P) **rises**, **interest rates are likely to go up**.
- **Higher interest rates** make **borrowing more expensive**, so businesses invest less in new projects, and people **save more instead of spending**.
- **Example:** If borrowing costs increase, companies may **delay building a new factory**, and families may **skip buying a new car**.
- When prices **fall**, the opposite happens, borrowing gets cheaper, encouraging **spending and investment.**

2) Income Effect 💰

- When the price level **rises**, people's **purchasing power (the ability to buy things) falls**.
- **Example:** If prices increase but your salary stays the same, you can buy **less**. This means people **cut back on spending**, and AD falls.
- If prices **fall**, people **feel richer** and **spend more**, boosting AD.

3) Exchange Rate Effect 🌍

- When the price level **falls**, **interest rates usually drop too**, making the national currency **weaker** compared to other currencies.
- A **weaker currency** makes the country's exports **cheaper** for foreign buyers and imports **more expensive**.
- **Example:** If the UK's price level drops, the British pound weakens, and more foreign businesses **buy UK goods** (like British cars or software). Exports increase, which **raises AD**.

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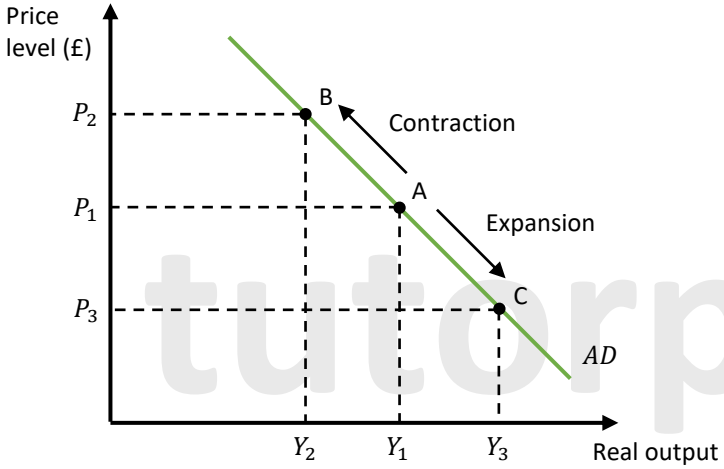
6.2 Aggregate Demand

The AD curve

Understanding Movement Along the AD Curve

📉 **If prices change**, but everything else stays the same (**ceteris paribus**), we don't shift the AD curve, we simply **move along it.**



6.2 Aggregate Demand

The AD curve

What Happens When Prices Change?

🔼 **If Prices Go Up → Contraction of AD (A → B)** 📉

- When the **price level (P)** increases (**P_1 → P_2**), the economy moves **up** the AD curve.
- Higher prices mean people and businesses can **afford less**, reducing overall demand.
- This leads to a **contraction in real output**, meaning the economy **shrinks** from **Y_1 → Y_2**.
- **Example:** Imagine coffee prices suddenly surge. People buy **fewer cups**, and cafes cut back on purchases. This lowers total demand in the economy.

🔽 **If Prices Fall → Expansion of AD (A → C)** 📈

- When the **price level (P)** decreases (**P_1 → P_3**), the economy moves **down** the AD curve.
- Lower prices mean people and businesses can **buy more**, increasing demand.
- This leads to an **expansion in real output**, meaning the economy **grows** from **Y_1 → Y_3**.
- **Example:** If smartphone prices drop, more people upgrade their phones, increasing demand for electronics, boosting production, and expanding GDP.

6.2 Aggregate Demand

The AD curve

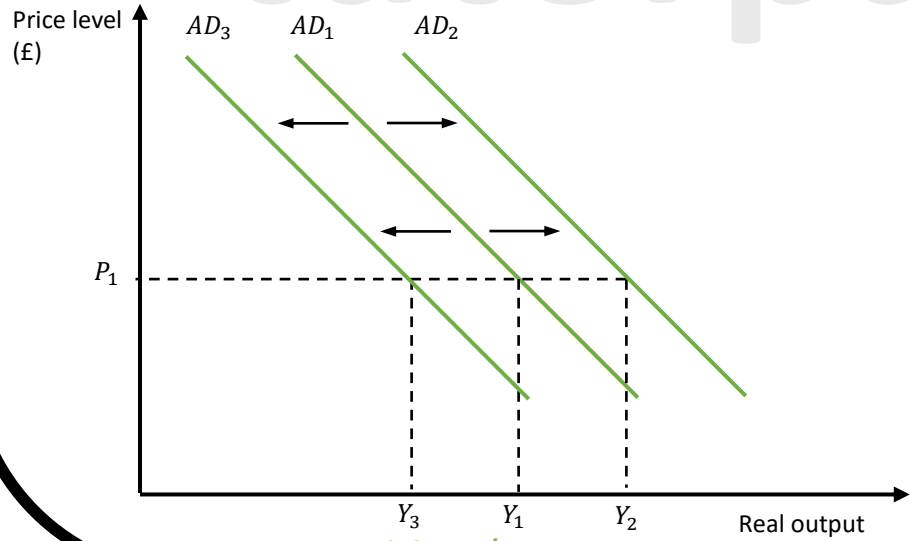
Understanding Shifts in the AD Curve 🚀

Sometimes, the entire curve **shifts** instead of just moving along it.

Why Does the AD Curve Shift?

The AD curve shifts when there is a change in **any factor** that affects demand, other than price. These factors are called the **determinants of aggregate demand**, and they include:

- **Consumer spending** (e.g., people feel wealthier and buy more)
- **Investment by businesses** (e.g., firms buy more equipment)
- **Government spending** (e.g., stimulus packages)
- **Net exports** (e.g., foreign demand for goods increases)



6.2 Aggregate Demand

The AD curve

- **What Happens When AD Shifts?**

🔼 **If AD Increases (AD_1 → AD_2) → Rightward Shift**

- This happens when people **spend more,** and businesses **invest more**.
- The economy **grows** as real output **increases from Y_1 → Y_2.**
- **Example:** If the government cuts taxes, people have more **money to spend**, boosting demand.

🔽 **If AD Decreases (AD_1 → AD_3) → Leftward Shift**

- This happens when people **spend less**, businesses **invest less**, or government **cuts spending**.
- The economy **shrinks** as real output **falls from Y_1 → Y_3.**
- **Example:** If interest rates rise, people borrow and spend **less**, reducing demand.

6.2 Aggregate Demand - Consumption (C)

💰 How disposable income affects spending?

Disposable income is the money households **have left** after paying their **taxes** (like income tax) and receiving any **benefits** (such as unemployment support). It's the cash they can actually **spend or save.**

Here's how it works:

- If **income tax** goes up ➡️ **Disposable income falls** (less money to spend)
- If **wages decrease** ➡️ **Disposable income falls** (again, less to spend)
- If the government **gives more benefits** (like unemployment support) ➡️ **Disposable income rises** (more money in your pocket!)

And guess what? **Spending follows income.**

📈 **More disposable income** = **More spending!** (People buy more things)
📉 **Less disposable income** = **Less spending!** (People cut back)

So, the more money people keep, the **more they fuel the economy** but if their income shrinks, so does their spending power. 🚀💸

6.2 Aggregate Demand - Consumption (C)

💰 How disposable income affects spending?

📈 MPC (Marginal Propensity to Consume) – The Spending Effect

MPC measures **how much extra money people spend** when they get a pay rise.

- For most people, **MPC is positive but less than 1** → This means that when their income increases, they do spend more, but **not** every extra penny.
- Some people have an **MPC of more than 1** → They spend **even more** than they earn by borrowing or dipping into savings.

👉 **Note:** Lower income people tend to have a **higher MPC** because they need to **spend most of their income just to get by**, while **richer people** can afford to **save more**.

- Formula: **MPC = change in consumption / change in income**

📊 APC (Average Propensity to Consume) – The Big Picture

APC measures how much of a person's **total income** is spent rather than saved.

- Formula: **APC = total consumption / total income**
- In rich, industrialized countries, **APC is usually less than 1** because people don't spend **all** their income, some of it goes into **savings.**

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6.2 Aggregate Demand - Consumption (C)

💰 The link between saving and spending

Think of your income as a **pie,** you can either **spend** it (consumption) or **save** it. The bigger the slice you spend, the smaller the slice you save, and vice versa.

- **Savings** = The money **not spent** from your income.
- If people **spend more**, they **save less**, and if they **save more**, they **spend less,** it's a simple **trade-off.**
- The same factors that **increase consumption** (like confidence in the economy) tend to **decrease savings**. For example, if people feel secure in their jobs, they're more likely to **splurge on holidays, gadgets, and eating out**, rather than **stash money away** for a rainy day.

📊 Key Savings Metrics

1) MPS (Marginal Propensity to Save) = **How much of an increase in income is saved** instead of spent.

- Formula: **MPS = Change in savings / Change in income**
- If you get a **£100 pay rise** and save **£20**, your **MPS is 0.2 (20%)**.

2) APS (Average Propensity to Save) = **The average proportion of total income that people save**.

- Formula: **APS = Total savings / Total income**
- If someone earns **£2,000 a month** and saves **£400**, their **APS is 0.2 (20%)**.

6.2 Aggregate Demand - Consumption (C)

💰 The link between saving and consumption

🔄 The Big Picture

- When people **save more**, there's **less spending**, which can **slow down economic growth**.
- When people **save less**, they **spend more**, boosting the economy but leaving them with **less financial security**.

💰 The determinants of saving

🏠 Savings vs. Spending: The Basics

- **Savings** = the part of your income you decide NOT to spend.
- **Consumption** = spending money on stuff like food, clothes, Netflix, or your daily iced coffee ☕.

You can either **save** or **spend** your **disposable income** (that's your income after taxes).

And guess what? The two are opposites:

- If savings go **down**, spending usually goes **up**.
- If savings go **up**, people tend to spend **less**.

📊 What Is the Household Savings Ratio?

This is a fancy way of saying:

- "What % of a household's income is being saved instead of spent?"

When times are good and people feel confident (like job security is high), they spend more and save less; the savings ratio is **low**.

When things feel uncertain (like during a recession or pandemic), people get cautious and save more; the savings ratio is **high**.

6.2 Aggregate Demand - Consumption (C)

💰 The determinants of saving

💡 Savings vs. Investment: What's the Difference?

They sound similar but are very different:

Term	Meaning
Savings	Households putting money aside, usually in banks or savings accounts. Not spent.
Investment	Businesses spending money on **capital goods** like machines, tech, or tools to produce more things in the future.

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6.2 Aggregate Demand - Consumption (C)

Other influences on consumer spending

Ever wondered why some people go on spending sprees while others save every penny? Several factors influence how much money people spend, from interest rates to personal attitudes. Let's break it down.

1. Interest Rates – The Cost of Borrowing

- Think of interest rates as the price tag on borrowing money. If interest rates are high, loans and mortgages become more expensive, meaning people have to pay back more than they borrowed. This makes them think twice before splurging on big-ticket items (i.e., a car), leading to **lower consumption**. High interest rates also mean bigger mortgage repayments, so homeowners have less to spend on other things. On top of that, higher interest rates can reduce the value of stocks, making people feel poorer; a double hit to spending.

2. Consumer Confidence – Spending with Optimism (or Fear)

- People don't just spend money based on what they have today, they also think about the future. If consumers **expect pay raises, stable jobs, or higher prices in the future**, they're more likely to spend now before things get expensive. On the other hand, if they **fear job losses or a recession**, they might **cut back on spending** and save instead. Even government tax changes influence spending habits, if people expect taxes to rise, they rush to buy before prices go up. But if they expect lower taxes, they might delay spending, hoping for better deals.

3. Wealth Effect – Feeling Richer, Spending More

- Wealth isn't just about the money in your bank account; it includes **assets like houses and stocks**. When **house prices rise**, homeowners feel wealthier and are more likely to **spend more** (even though their income hasn't changed). The same goes for the stock market, if people's shares increase in value, they might cash out some profits and go shopping. On the flip side, if stock or house prices **fall**, they feel poorer and **cut back on spending**.

6.2 Aggregate Demand - Consumption (C)

Other influences on consumer spending

4. Income Distribution – Who Gets the Money Matters

- Not everyone spends money in the same way. **Wealthy individuals tend to save a bigger chunk of their income**, while those on lower incomes spend a higher proportion. If money is redistributed **from the rich to the poor** (through policies like higher taxes on the wealthy and increased benefits for lower earners), overall consumption is likely to **rise** because lower-income households tend to **spend rather than save**.

5. Tastes and Attitudes

- Let's face it, society is materialistic. Many people love having the latest gadgets, fashion trends, or cars, even if it means spending more than they earn. This **drives up consumption**, sometimes even beyond what's sustainable. But if people suddenly became less materialistic and focused on saving, overall spending would **decrease**.

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6.2 Aggregate demand – Investment (I)

Gross and net investment

What is Investment?

- Investment is when businesses spend money on **capital goods;** things like machines, buildings, and equipment that help them **produce more goods and services**. The more businesses invest, the **more they can produce**, which helps the entire economy grow.

Depreciation – When Things Wear Out

Over time, machines, tools, and buildings **lose value** as they wear out, break down, or become outdated. This is called **depreciation**.

👉 If a company just replaces old equipment without upgrading, it **doesn't actually expand** production.

👉 But if they buy **new and improved** machines with better technology, they can **increase production capacity** and boost economic growth.

Gross Investment vs. Net Investment

Not all investment leads to growth – sometimes it just replaces what's already worn out. Here's the difference:

🔵 **Gross Investment** – This is the **total** money spent on capital goods. It includes:

- Buying **brand-new** machines and equipment 🏭
- Replacing **old, worn-out** capital goods 🔧

6.2 Aggregate demand – Investment (I)

Gross and net investment

🔵 **Net Investment** – This tells us how much actual new capital has been added to the economy. It's calculated as:

$$Net\ Investment = Gross\ Investment - Depreciation$$

- If net investment is **positive**, businesses are **growing** and expanding production. 📈
- If net investment is **zero or negative**, companies are just replacing what's worn out, not really growing. 🚫

Why Does It Matter?

- Net investment is super important because it shows whether businesses are **just maintaining** their operations or **actually growing and innovating**. The more firms invest in **new capital goods**, the **more jobs, higher productivity, and better economic growth** we get. 🚀💰

6.2 Aggregate demand – Investment (I)

Influences on investment

Businesses don't just throw money into investments for fun; they carefully consider **whether it's worth it.** Firms will only invest if they feel **confident** that they'll make a **good return** (a profit) on what they put in. The whole point? **Profit maximisation** – making as much money as possible while keeping costs low.

Here are **some key factors** that influence how and when businesses invest:

1) Economic Growth 📊

Think of economic growth as a **green light for businesses** to expand. When the economy is growing fast:

- Businesses expect **higher demand** → means **more sales**
- **More sales = higher profits** 🤑
- The quicker the economy grows, the **more urgent** it is for businesses to invest so they don't fall behind competitors.

2) Interest Rates 💳

Most businesses **borrow money** to invest, so interest rates matter **A LOT**.

🔷 If **interest rates are high** 💰⬆️ → **borrowing becomes expensive** → investment **slows down** 🚫
🔷 If **interest rates are low** 💰⬇️ → **cheaper loans** → businesses **invest more.** 🚀

Basically, investment and interest rates have an **inverse relationship;** when one goes up, the other usually goes down.

6.2 Aggregate demand – Investment (I)

Influences on investment

3) Demand for Exports 🌍

When businesses **sell products to other countries**, they **export**. If demand for exports is high, firms **invest more** to keep up with global demand.

📣 **Two major reasons exports increase:**
1️⃣ More people around the world **want** what a business sells 📦
2️⃣ **Exchange rate depreciation** – when a country's currency **loses value**, its goods **become cheaper** for foreign buyers, boosting sales abroad.

When businesses expect higher exports, they **invest more** in production to keep up with demand.

4) Government & Regulations 🏛️

The government **plays a BIG role** in business investment sometimes helping, sometimes making things harder:

✅ **Government support** (e.g. subsidies) → Encourages businesses to **invest more.**

❌ **Strict regulations** (e.g. environmental rules, worker protections) → Can **increase costs** and **reduce profits**, making businesses less likely to invest

5) Business Expectations & Confidence 📈

Imagine running a business, you wouldn't throw money into big investments if you weren't **confident** about the future, right?

🔷 When the economy is **growing steadily**, businesses feel **optimistic**, so they **invest more**.
🔷 If there are signs of a **slowdown**, businesses start **worrying about future profits**, so they hold back on investment.

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6.2 Aggregate demand – Investment (I)

Influences on investment

6) Keynes & Animal Spirits 🐂😈

Ever heard of **"herd mentality"**? That's exactly what economist **John Maynard Keynes** was talking about when he described **animal spirits**.

🔷 In **good times**, businesses can be **too optimistic**, investing **too much** and taking **big risks**.
🔷 In **bad times**, fear takes over, and businesses **panic** and stop investing, even if conditions aren't that bad.

Essentially, businesses often **follow the crowd** rather than making purely rational decisions. If everyone's investing, they **jump on the bandwagon**. If everyone's holding back, they **do the same**.

7) Access to Credit 💳🏢

Investment isn't cheap as businesses **borrow money** to finance big projects. But what happens if they **can't get loans**?

🔷 If **banks are willing to lend** (meaning there's **easy access to credit**), businesses **invest more**.
🔷 If **loans are hard to get** (like in a financial crisis), businesses **struggle to fund investments**, and growth slows down.

Developing countries often face **low access to credit**, making it much harder for businesses to expand and invest.

6.2 Aggregate demand – Investment (I)

Influences on investment

The accelerator theory

The **Accelerator Theory** is all about how businesses decide when to invest more money into things like machinery, equipment, and factories.

In simple terms:

- **If the economy is growing faster, businesses will invest more. If it's slowing down, they'll invest less.**

🧠 **The Basic Idea:**

- When **national income** (the total money earned in the country) is **growing**, people are spending more.
- To keep up with that rising demand, **firms need to produce more**.
- But they can't do that with old or limited equipment, so they **invest in more machines, new factories, better tech, etc.**

📉 **And When Growth Slows Down?**

- If national income **stops growing** or **slows down**, firms don't need to produce as much.
- That means **less need for new equipment**, so investment drops.

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6.2 Aggregate demand – Government expenditure (G)

Influences on government expenditure

The **government** plays a HUGE role in an economy by **spending money** on things like **defence, education, healthcare (NHS in the UK), infrastructure, and social benefits**.

But here's the catch: **where they spend and how much they spend affects the economy massively.**

Government spending is one of the key components of **Aggregate Demand (AD)** (which is the total demand for goods and services in an economy). If the government **spends more**, it can boost demand, but if they **increase taxes at the same time**, it might cancel out the impact.

1) The Trade Cycle 📉📈

The economy goes through **ups and downs**, just like a rollercoaster. The government tries to **smooth out the ride** by adjusting its spending:

✓ **Recession (Bad Times)** 😔 → The government **spends more** to create jobs and support people, e.g., increasing unemployment benefits. This helps **boost demand** and get the economy back on track.

✓ **Boom (Good Times)** 😃 → The government **spends less** to **control inflation** (when prices rise too fast). This prevents the economy from overheating!

6.2 Aggregate demand – Government expenditure (G)

Influences on government expenditure

2) Fiscal Policy 🏢

Fiscal policy is just a fancy term for **how the government manages its budget – spending and taxes**.

✓ Some spending is **fixed** (they HAVE to pay for schools, pensions, etc.).
✓ But governments can **change spending levels** based on their **priorities,** for example, increasing investment in **healthcare, defence, or public transport**.

Governments must **balance their budget**, deciding **how much to tax** and **how much to spend.**

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6.2 Aggregate demand – Net Exports (X-M)

Influences on the net trade balance

Net trade is simply **exports minus imports**. If a country sells more goods and services abroad than it buys, it has a **trade surplus**. If it buys more than it sells, it has a **trade deficit**. But what actually affects how much a country trades? Let's break it down.

1. Real Income (How Rich People Feel)

When people in the UK earn more money (real income rises), they usually **spend more**, often on imported goods (think fancy foreign cars, exotic food, and cool gadgets). This means **imports go up**, reducing net trade.

However, if incomes are rising because **UK businesses are exporting more**, then **net trade could actually increase**. So, the impact of income changes depends on whether people are spending more on local or foreign goods.

2. Exchange Rates (How Expensive the £ Feels)

Exchange rates determine how much the UK pound is worth compared to other currencies.

- **If the pound is strong**, imports become **cheaper** (because UK consumers can buy more foreign currency), and exports become **more expensive** (making it harder for UK businesses to sell abroad). This **lowers net trade**.
- **If the pound is weak**, the opposite happens, UK exports **become cheaper** for foreign buyers, and imports **become more expensive**. This can **increase net trade**, depending on how much demand changes.

3. The State of the Global Economy (How Well Other Countries Are Doing)

- If the countries that **buy UK goods are booming**, they'll likely **import more from the UK**, increasing exports and improving net trade. But if those economies slow down or enter a recession, **they'll buy less**, meaning **UK exports fall** and net trade worsens.

6.2 Aggregate demand – Net Exports (X-M)

Influences on the net trade balance

4. Protectionism (Government Barriers to Trade)

- Protectionism is when governments introduce measures to **protect local businesses from foreign competition**. This includes:
- **Tariffs** (taxes on imports to make them more expensive)
- **Quotas** (limits on the amount of imports allowed)
- **Regulations** (rules that make it harder for foreign businesses to sell)

If **other countries** put up trade barriers against **UK goods**, **exports fall**, and net trade worsens. On the flip side, if the UK **imposes tariffs on imports**, it might **reduce imports** and improve net trade.

However, **free trade** (when there are no barriers) can **increase or decrease net trade**, depending on how competitive UK goods are.

5. Non-Price Factors (It's Not Just About Money)

Sometimes, people don't just buy things based on price, they care about **quality, branding, and marketing** too! If UK products are known for their **high quality** and **strong branding**, **foreign buyers will prefer them**, increasing exports and improving net trade.

For example:

- **Luxury British brands (like Burberry or Jaguar) sell well even when they're expensive** because of their reputation.
- **If UK goods look cheap and unreliable, people will buy from other countries instead.**

Marketing and product design **can make exports more inelastic,** meaning people will buy them even if the price goes up.

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6.3 Aggregate Supply

The AS curve

What is Aggregate Supply?

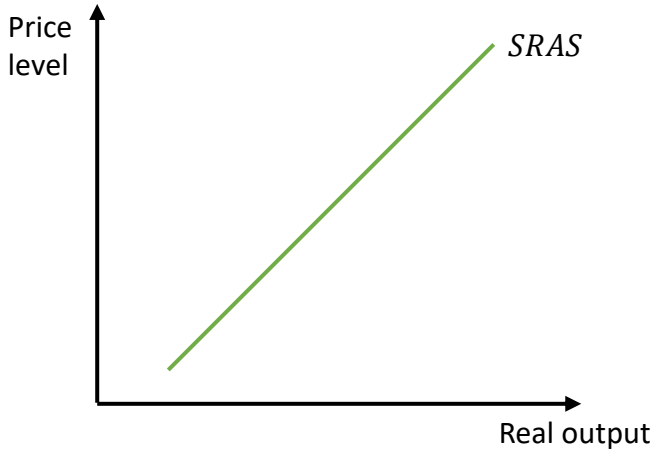
Aggregate supply (**AS**) is **the total amount of goods and services that producers in an economy are willing and able to supply at a given price level over a certain period**. Think of it as the economy's **big production line**, churning out everything from burgers 🍔 to airplanes ✈️.

The AS Curve Explained:

When you plot **aggregate supply** on a graph, it typically **slopes upwards**, especially in the short run. This means that as the price level increases, firms are happy to **produce more**.

What is the SRAS Curve?

The **Short-Run Aggregate Supply (SRAS) curve** shows the relationship between the **price level** and the **total output (real GDP) that firms are willing to supply** in the short run. Think of it as the **economy's production response** to changing prices.



6.3 Aggregate Supply

The AS curve

Why Does the Short-Run Aggregate Supply (SRAS) Curve Slope Upwards? 📈

Higher Production Means Higher Costs 💰

- As businesses **produce more**, they **need more workers**, which means **higher wages** and other expenses.
- More production = **more spending on raw materials, wages, and energy bills**.
- To **cover these rising costs**, firms **raise prices**, which leads to a **higher price level**.
- As a result, the curve slopes upwards because firms are **only willing to supply more** when the **price is higher**.

6.3 Aggregate Supply

The AS curve

Moving Along the SRAS Curve – What Does It Mean? 🧍⬆️⬇️

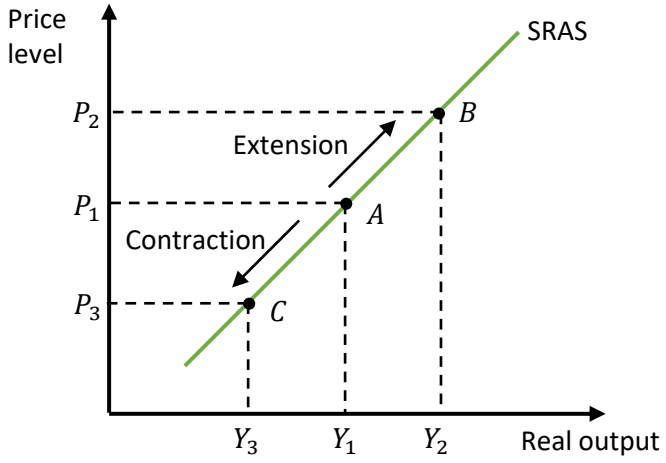
A **movement along** the SRAS curve happens **only when the average price level (AP) changes**.

🔷 **Extension (from A to B):** Price increases (P1 to P2) → Firms produce more (Y1 to Y2) → Movement up the SRAS curve
🔷 **Contraction (from A to C):** Price decreases (P1 to P3) → Firms produce less (Y1 to Y3) → Movement down the SRAS curve

Therefore, if prices **rise**, businesses produce more. If prices **fall**, they produce less.

Why?

- Higher prices make it more attractive for firms to produce and sell goods, even if costs rise slightly.
- Lower prices discourage firms from producing more, as they might not cover their costs.



6.3 Aggregate Supply

The AS curve

Why Does the SRAS Curve Shift? 🔄

Unlike movements **along** the SRAS curve (which happen when price levels change), a shift occurs when there is a **change in production costs or supply conditions**. These changes can **either make production easier and cheaper (shifting SRAS right) or harder and more expensive (shifting SRAS left).**

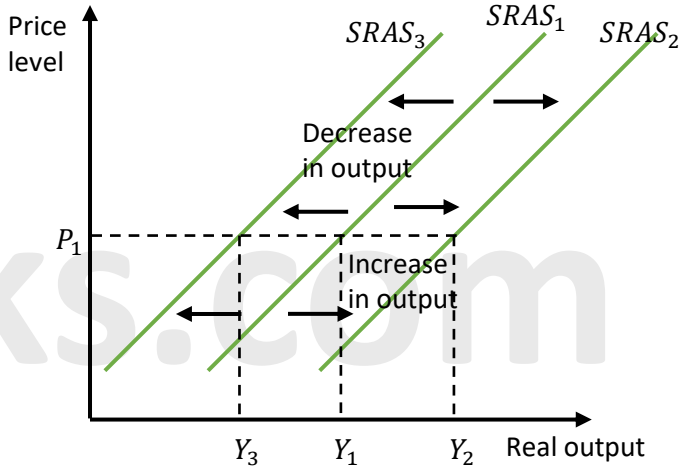


Diagram Analysis: What's Happening? 🧐📊

SRAS Shifts Right (Good News! ✅**)**

- When the **cost of production falls** (e.g., wages go down, raw materials become cheaper, or technology improves), businesses can **produce more at every price level**.
- This shifts the **SRAS curve to the right ($SRAS_1$ → $SRAS_2$)**.
- **Real output increases** from **Y_1 to Y_2**, meaning the economy is producing more output!

🎯 **Why?** Lower costs mean businesses can produce more at the same price, boosting supply and economic growth.

6.3 Aggregate Supply

The AS curve

SRAS Shifts Left (Uh-Oh! ❌)

- If **labour costs rise** (e.g., higher wages, expensive raw materials, or supply chain disruptions), businesses **struggle to produce as much**.
- This shifts the **SRAS curve to the left ($SRAS_1$ → $SRAS_3$)**.
- **Real output decreases** from **Y_1 to Y_3**, meaning the economy is producing less output.

🎯 **Why?** Higher production costs force businesses to **reduce output**, leading to lower supply and potential economic slowdown.

6.3 Aggregate Supply

The relationship between short-run AS and long-run AS

Short-Run Aggregate Supply (SRAS) – What's Happening Right Now? ⏳

SRAS is all about how much stuff (goods & services) businesses can produce in the short term. It's mainly influenced by **changes in production costs** – like wages, raw materials, and taxes.

📌 **Key point:**

- The **short run** refers to a period where **at least one factor of production (land, labour, capital, or entrepreneurship) is fixed** – meaning businesses **can't** quickly adjust all resources to meet demand.

🔷 **Example:** If oil prices suddenly increase, it costs more to produce goods, so **SRAS decreases** (shifts left). But if wages drop, production costs fall, and **SRAS increases** (shifts right).

Long-Run Aggregate Supply (LRAS) – The Big Picture 🌎

Unlike SRAS, **LRAS is about an economy's total productive capacity in the long run**. It's influenced by **how much the economy can produce when all factors of production are fully employed**.

📌 **What makes LRAS change?**

- **Quantity of factors of production** (e.g., more workers, more factories).
- **Quality of factors of production** (e.g., better education, improved technology).

🔷 **Think of it like this:**

- If a country **invests in education and infrastructure**, workers become more skilled, factories become more efficient, and the **LRAS curve shifts right** → meaning **higher potential economic output.**
- If there's a **natural disaster or war**, destroying resources, **LRAS shifts left**, reducing economic capacity.

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6.3 Aggregate Supply

Factors influencing short-run AS

The short-run aggregate supply (SRAS) curve represents the total output of goods and services that businesses are willing to produce at different **price levels** in the short term.

But here's the catch, SRAS can shift. The main reason? **Changes in production costs**. Three key factors influence this:

1) Raw Materials & Energy Costs ⛽

- If the price of **raw materials** (like metals, timber, or wheat) or **energy** (like oil & gas) **goes up**, it gets **more expensive** to produce goods. This means businesses can't afford to make as much, so **SRAS shifts left** (meaning lower supply at the same price level).

Example: Imagine fuel prices skyrocket. Factories and delivery trucks need fuel, so production costs **increase**, and businesses **cut back on output** = **SRAS decreases**.

💡 **Key takeaway: Higher production costs = lower SRAS; Lower production costs = higher SRAS.**

2) Exchange Rates 💱

- **The value of a country's currency matters.** If the British pound **weakens** (depreciates), it takes more pounds to buy the same amount of imported materials. That means **higher costs** for businesses that rely on imports → **SRAS shifts left**.

- If the pound **strengthens** (appreciates), imports become **cheaper**, lowering production costs and **shifting SRAS right**.

6.3 Aggregate Supply

Factors influencing short-run AS

📌 **Real Example:**
After **Brexit**, the pound fell in value. Imported goods (like food, fuel, and raw materials) became **more expensive**, increasing costs for businesses and **causing cost-push inflation** (higher prices due to rising production costs).

3) Taxation & Government Policies 💰

Taxes directly impact **how much businesses pay to produce goods**:

- **Higher taxes** (like corporation tax or VAT) = **increased costs** for firms, leading to **less production** and **SRAS shifting left**.

- **Subsidies** (government financial support) help businesses **lower costs**, making production cheaper and **shifting SRAS right**.

📌 **Example:** If the government introduces **higher carbon taxes**, energy costs rise, pushing **SRAS left**. But if they **subsidise green energy**, businesses pay less, and **SRAS shifts right**.

🚨 **Supply-Side Shocks – When Things Go Crazy!** 🚨

A **supply-side shock** is when something **BIG & UNEXPECTED** happens that **suddenly** changes production costs.

- **Example:** A natural disaster destroying factories, a war increasing oil prices, or a sudden tax increase.

- These events can **rapidly** shift SRAS left, causing inflation and economic slowdowns.

🛍️ Additional information: **Demand Side Shock -** This happens when something causes people or businesses to **suddenly change their spending habits**.

💡 **Example:** A sudden rise in interest rates makes borrowing expensive, so people stop taking loans and spending drops. That's a demand shock. Or think of a new viral trend that makes everyone rush to buy a certain gadget; BOOM, demand spikes.

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6.3 Aggregate Supply

Different shapes of the long-run AS curve

What is Long-Run Aggregate Supply (LRAS)?

Long-run aggregate supply (**LRAS**) represents the total output an economy can produce **when all resources (land, labour, capital, and enterprise) are fully employed**.

- It depends on the **productive capacity** of the economy.
- This capacity can increase if the **quantity or quality** of the **factors of production** (things like labour, machinery, and natural resources) improves.

Economists have two **very different** takes on how the LRAS behaves:

1) The Classical View (aka the "original view") 🏛️

- Based on old-school economic thinking, this theory argues that **the economy is always at full employment** in the long run.

2) The Keynesian View (John Maynard Keynes, 1936) 📈

- Keynes wasn't buying the idea that markets **always fix themselves**. He believed that **economies could stay stuck in a downturn** for a long time without government intervention.

6.3 Aggregate Supply

Different shapes of the long-run AS curve

1. The Classical Long-Run Aggregate Supply (LRAS) View

The **Classical economic view** sees the **Long-Run Aggregate Supply (LRAS)** curve as **perfectly inelastic**, which means it's a straight vertical line. Why? Because in the long run, an economy always operates at **full employment**, using all available **resources** (such as labour, land, and capital) as efficiently as possible.

At this point, the economy is producing at its productive potential, on its **Production Possibilities Frontier (PPF)**, the maximum amount of goods and services an economy can produce when it's running at full capacity.

How the Economy Adjusts in the Long Run

- According to the classical perspective, no matter what happens in the short term, the economy will **always** return to full employment in the long run.
- But in the short term, things can get a little messy...

Short-Run Output Gaps

Not everything runs smoothly all the time, sometimes the economy overheats, and other times it slows down. These fluctuations create **output gaps**:

- **Inflationary Gap:** Happens when the economy is booming (**economic growth is too high**). When this occurs, demand is greater than supply, pushing up prices. But don't worry, **in the long run, the economy self-corrects**, bringing output back to normal, but at a **higher price level**.
- **Recessionary Gap:** This is the opposite scenario. During **slowdowns or recessions**, the economy isn't producing as much as it could. But again, **self-correction kicks in**, and the economy returns to its full employment level, but this time, at a **lower price level**.

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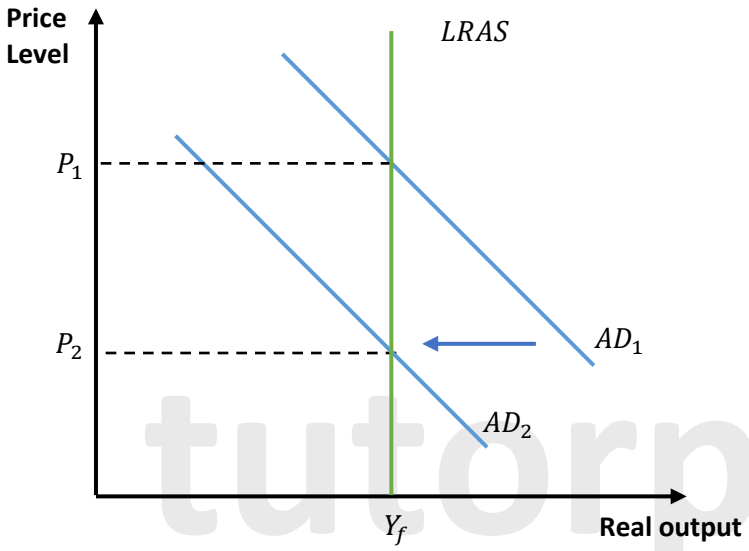
6.3 Aggregate Supply

Different shapes of the long-run AS curve

1. The Classical Long-Run Aggregate Supply (LRAS) View



The **Classical economic theory** sees the **Long-Run Aggregate Supply (LRAS)** curve as a **vertical line** at **full employment output (Y_f)**.

What Happens in the Economy?

- The economy starts in **equilibrium**, where **Aggregate Demand (AD)** meets **LRAS** at **P_1, Y_f** (a stable price level and full employment output).
- If a slowdown hits, causing a **fall in aggregate demand**, output decreases (**AD_1 → AD_2**), creating a short-term **recessionary gap** (less economic activity, real GDP is less than the potential output).
- But don't worry. **Classical economists believe the economy self-corrects** over time. In the **long run**, wages and prices adjust, bringing output back to **Y_f**, but at a lower price level (**P_2**).

6.3 Aggregate Supply

Different shapes of the long-run AS curve

2. The Keynesian Long-Run Aggregate Supply (LRAS) View

- John Maynard Keynes had a different take on the **long-run aggregate supply (LRAS)** curve. Instead of believing it's always fixed, he argued that it's more **L-shaped**, meaning supply can be flexible at lower output levels but eventually becomes rigid at full capacity. Let's break it down:

Elastic Supply at Low Output Levels 📈

- When the economy is struggling and there's a lot of **spare production capacity** (idle workers, unused factories, etc.), firms can easily produce more goods **without raising prices**. In this phase, supply is said to be **elastic**, meaning it can stretch without much price pressure.

💡 Example: If a factory is running at 50% capacity, it can hire more workers and produce more goods without increasing costs much.

Perfectly Inelastic Supply at Full Capacity 🚦

- However, once the economy reaches **full employment (Y_f)**, where all available **resources** (labour, capital, land) are being used efficiently, things change. At this point, supply becomes **perfectly inelastic** (i.e., it can't increase anymore). The only way for businesses to compete is by bidding for **scarce resources**, which drives **inflation** (rising prices).

💡 Example: If all skilled workers are already employed, companies must offer **higher wages** to attract employees, leading to price increases.

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6.3 Aggregate Supply

Different shapes of the long-run AS curve

2. The Keynesian Long-Run Aggregate Supply (LRAS) View

Why Keynes Believed the Economy Doesn't Always Self-Correct 🔄

Classical economists believed the economy **automatically** fixes itself. Keynes, however, argued that this isn't always the case.

❖ **The Economy Can Get Stuck Below Full Employment** ❄️

- Sometimes, demand remains too low, and businesses don't have the confidence to expand. This leads to an **output gap**, where actual production is below potential.
- This happened during the **Great Depression** when businesses were too afraid to invest, and unemployment stayed high for years.

❖ **The Role of Government** 🏛️

- Keynes believed that when the economy is struggling, the government should **increase spending (expenditure)** to boost **aggregate demand (AD)** and **stimulate economic activity**.
- This helps shift the economy back towards full employment and prevents stagnation.

💡 Example: In a recession, governments can **build roads, invest in healthcare, or reduce taxes** to encourage spending and job creation.

The "Animal Spirits" Theory 🐂🐻

Keynes also introduced the concept of **"animal spirits"**, which refers to the emotions and confidence that drive consumer and business decisions. If businesses and consumers **fear a recession**, they spend and invest less, making the downturn worse. To counteract this, governments can step in to **restore confidence** and keep the economy moving.

6.3 Aggregate Supply

Different shapes of the long-run AS curve

2. The Keynesian Long-Run Aggregate Supply (LRAS) View

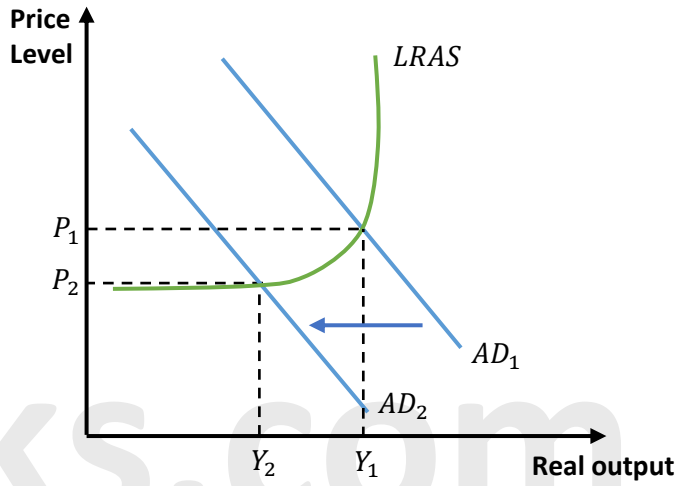

Diagram analysis

- The **long-term output** of an economy is determined by using **all available factors of production** (land, labour, capital, and entrepreneurship). This means **LRAS occurs at Y_1**—the full employment level of output.
- Initially, the economy is in **equilibrium**, where **aggregate demand (AD_1)** and **LRAS** meet at price level **P_1** and output level Y_1.

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Different shapes of the long-run AS curve

2. The Keynesian Long-Run Aggregate Supply (LRAS) View

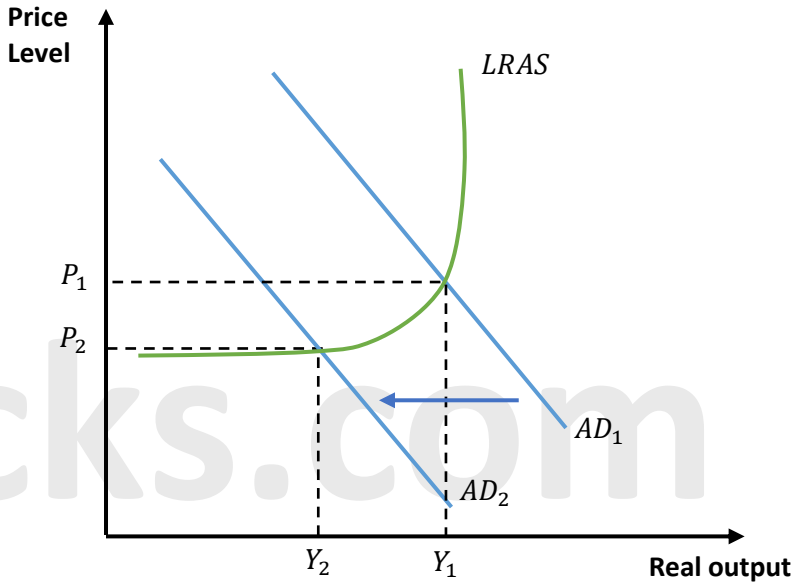
Diagram analysis continued…

- But then, **a slowdown hits**, maybe due to a financial crisis, uncertainty, or external shocks. This causes **aggregate demand to fall from AD_1 to AD_2**, reducing output and creating a **recessionary gap ($Y_2 - Y_1$)**.
  - At this point, the economy might reach a stage where **average prices stop falling (P_2)**, but output remains low.
  - The economy **may not self-correct** for years, meaning that market forces alone won't restore full employment.
  - The drop in output leads to **high unemployment** and **low confidence** in businesses and consumers.
    - As a result, **investment drops**, and **consumption shrinks**—further deepening the downturn.
- **John Maynard Keynes** argued that in such situations, the government **must step in** with policies to boost demand.
  - This could be **large-scale government spending (fiscal stimulus)**, such as Roosevelt's **New Deal** during the Great Depression or **responses to financial crises like 2008**.

6.3 Aggregate Supply

Different shapes of the long-run AS curve

2. The Keynesian Long-Run Aggregate Supply (LRAS) View



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6.3 Aggregate Supply

Factors influencing LRAS

Again, the **long-run aggregate supply (LRAS)** represents the total amount of goods and services an economy can produce when all **factors of production** (land, labour, capital, and entrepreneurship) are fully utilised. Any improvement in the **quantity** (amount) or **quality** (effectiveness) of these resources will shift **LRAS outward**, increasing the economy's potential growth, while declines in these factors will shift **LRAS inward**. This is closely linked to the **production possibilities frontier (PPF)**, which illustrates the maximum output an economy can achieve with its available resources.

Here are some key factors that can **increase LRAS** and drive long-term economic growth:

1 **Technological advances** – New inventions and process improvements boost efficiency, allowing businesses to produce more with fewer resources. **Example:** The development of **3D printing** revolutionised manufacturing by reducing material waste and speeding up production.

2 **Changes in relative productivity** – When workers become more efficient, output per worker rises. **Example:** The introduction of **cloud computing** has enabled businesses to automate data storage and management, significantly improving productivity in industries like banking and retail.

3 **Changes in education & skills** – A more skilled workforce can produce more output with the same resources. **Example:** Countries like **Finland** invest heavily in education, ensuring workers have advanced skills in technology and engineering, increasing overall economic output.

4 **Changes in government regulations** – Strategic government spending can boost long-term supply. **Example: High-speed rail projects**, such as China's bullet train network, improve transport efficiency, reducing travel times and increasing economic productivity.

6.3 Aggregate Supply

Factors influencing LRAS

5 **Demographic changes & migration** – A larger and more dynamic labour force increases production potential. **Example:** The **United States** has historically benefited from **high-skilled immigration**, bringing in top scientists, engineers, and entrepreneurs who contribute to economic expansion.

6 **Competition Policy** – Reducing monopolies and encouraging competition forces firms to innovate and improve efficiency. **Example:** The **European Union's antitrust policies** have prevented large tech companies from stifling competition, allowing smaller businesses to thrive and contribute to economic growth.

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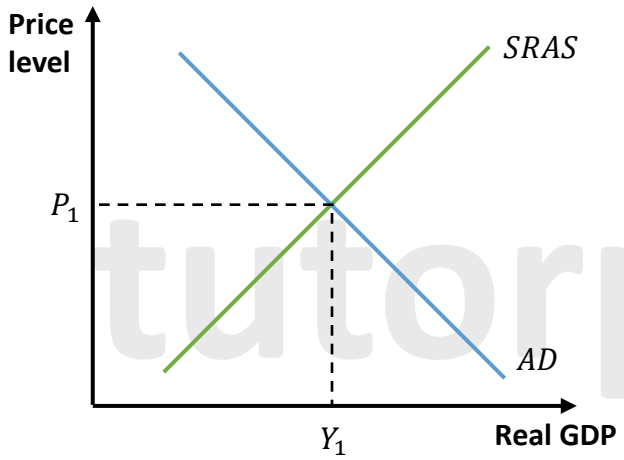
6.4 The interaction of AD and AS

Real national output equilibrium

Short term equilibrium

Real national output equilibrium happens when **aggregate demand (AD)** (the total demand for goods and services) meets **aggregate supply (AS)** (the total production of goods and services in an economy). At this point, the economy is stable, and prices and output are balanced.



Understanding Short-Run Equilibrium

- According to **classical economic theory**, the economy naturally adjusts to reach a **short-run equilibrium**, which occurs at the intersection of AD and **short-run aggregate supply (SRAS)**.
- If **AD increases or decreases** (due to changes in consumer spending, investment, government policies, etc.), the economy moves to a **new short-run equilibrium** with different price levels and output.
- Likewise, shifts in **SRAS** (caused by changes in production costs, wages, or resource availability) also create a **new short-run equilibrium** as firms adjust their supply.

6.4 The interaction of AD and AS

Real national output equilibrium

- In simple terms, **short-run equilibrium** is where the economy settles temporarily based on current demand and supply conditions. However, this balance isn't fixed, it shifts as economic conditions change.

Long term equilibrium

Economists have different takes on how the economy behaves in the **long run**, particularly when it comes to achieving **equilibrium**, the point where total supply matches total demand.

- **Classical economists** argue that, no matter what happens in the short term, the economy will **always** return to its **full potential output** (also called the full employment level of output). The only thing that changes over time is the **price level**, which adjusts to bring the economy back to balance.
- **Keynesian economists**, on the other hand, believe that the economy **can get stuck** at any level of output and may not automatically return to full employment. This means that government intervention, such as increased public spending, might be necessary to help the economy reach its full potential.

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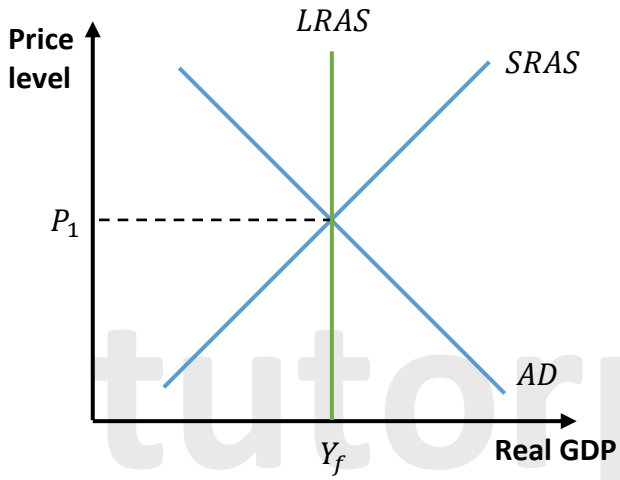
6.4 The interaction of AD and AS

Real national output equilibrium

Long term equilibrium

Classical View



🔷 **Key Takeaways from the Diagram:**

- **LRAS (Long-Run Aggregate Supply)** represents the **maximum** output an economy can achieve when all resources are fully used, no extra slack, no spare workers sitting idle.
- The **SRAS (Short-Run Aggregate Supply) curve** meets **AD (Aggregate Demand)** right at **LRAS**, showing that the economy is running at full capacity.
- The economy is producing at Y_f (full employment output), meaning that all those who want a job (at the going wage rate) have one.
- The **average price level** when the economy is at full employment is **P_1**.

6.4 The interaction of AD and AS

Real national output equilibrium

💡 **What This Means in Simple Terms:**

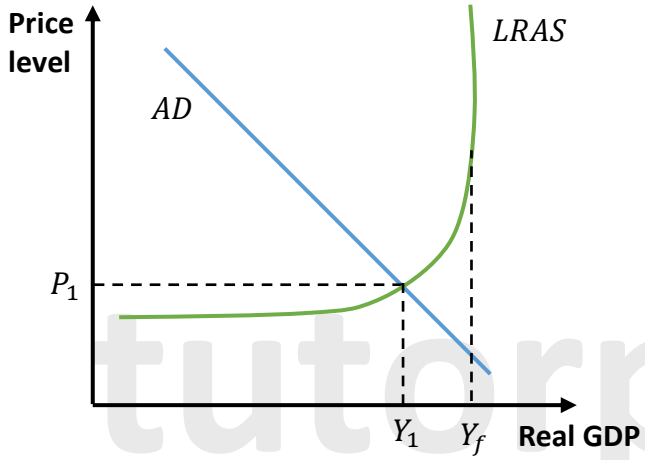
At this point, the economy is like a well-oiled machine, firms are producing as much as they possibly can, workers are fully employed, and supply perfectly meets demand. Any changes in demand (AD) will **only affect prices** in the long run, not output. Classic economists believe that if the economy strays from this equilibrium, it will eventually **self-correct** back to full employment. 🚀

6.4 The interaction of AD and AS

Real national output equilibrium

Long term equilibrium

Keynesian View



🔷 **Key Takeaways from the Diagram:**

- The **vertical part of the LRAS curve** aligns with the **classical view.** At full capacity, the economy **can't** produce more without causing inflation.
- However, before reaching full capacity, the **LRAS curve is elastic (flat)**. This means that when demand is low, firms can **increase output without raising prices**, think of factories with spare machines or unemployed workers who are ready to work.
- Prices **don't fall below a certain point** due to real-world factors like **Minimum wage laws** 🏢 (preventing wages from dropping too low) and **Trade unions** ✊ (protecting workers' pay).

6.4 The interaction of AD and AS

Real national output equilibrium

⚖️ **What's the Big Idea?**

- Unlike classical economists, **Keynesians** argue that **real output equilibrium** (when demand = supply) can happen at **any level of output**, not just at full employment.
- If demand is too low, the economy might get **stuck** in a **recession**, needing **government intervention** (like increased public spending) to push demand back up.

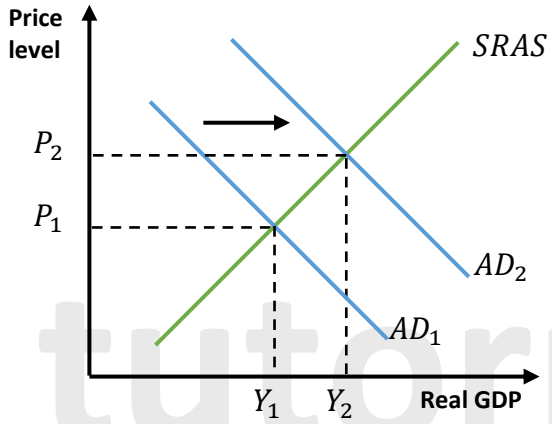
💡 **In simple terms:**
The Keynesian model shows that economies don't always "fix themselves." If demand is weak, unemployment can stay high, and the government may need to **step in** to boost spending and get things moving again.

6.4 The interaction of AD and AS

Real national output equilibrium

Shifts in the equilibrium price level and real GDP

Classical approach - changes in AD



🔷 **Key Takeaways from the Diagram:**

- The economy was in **initial equilibrium** at P_1Y_1, meaning the price level was P_1, and real GDP (total economic output) was Y_1.
- A rise in one or more of the **components of AD** [such as **consumption (C), investment (I), government spending (G), or net exports (X-M)]** shifts AD_1 to AD_2.
- For example, if consumer spending surges because people feel confident about the economy, businesses will sell more, increasing total demand.

6.4 The interaction of AD and AS

Real national output equilibrium

The Effects:

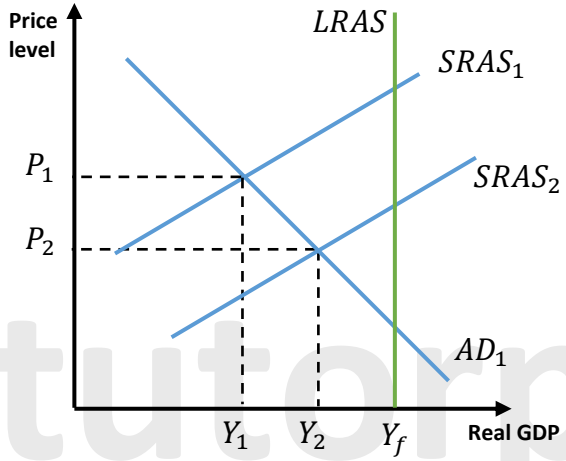
- **Prices Go Up** 📈: The economy reaches a new price level at P_2.
- **Output Increases** 🏭: Businesses respond to higher demand by increasing production, leading to an increase in **real GDP** to Y_2.
- **New Equilibrium Formed** ⚖️: The economy settles at a new short-run equilibrium at P_2Y_2

6.4 The interaction of AD and AS

Real national output equilibrium

Shifts in the equilibrium price level and real GDP

Classical approach - changes in SRAS



🔷 **Key Takeaways from the Diagram:**

- The economy was initially at **P_1Y_1**, meaning that the price level was **P_1** and real GDP was **Y_1**.
- This represents a **recessionary gap** (negative output gap), where the actual output is below the economy's full potential **(Y_f)**.

What Causes SRAS to Increase?

- An improvement in one of the **determinants of SRAS** (such as **higher productivity, lower wages, or reduced production costs**) shifts the SRAS curve from **$SRAS_1$ to $SRAS_2$**.
- Example: If new technology makes factories more efficient, businesses can produce more **without increasing costs**.

6.4 The interaction of AD and AS

Real national output equilibrium

The Effects:

✅ **Lower Prices**: The economy reaches a new equilibrium at a lower price level **(P_2)**.

✅ **Higher Output**: Businesses **increase production**, raising real GDP from **Y_1 to Y_2**.

✅ **New Short-Run Equilibrium**: The economy now stabilizes at **P_2Y_2**.

Result:

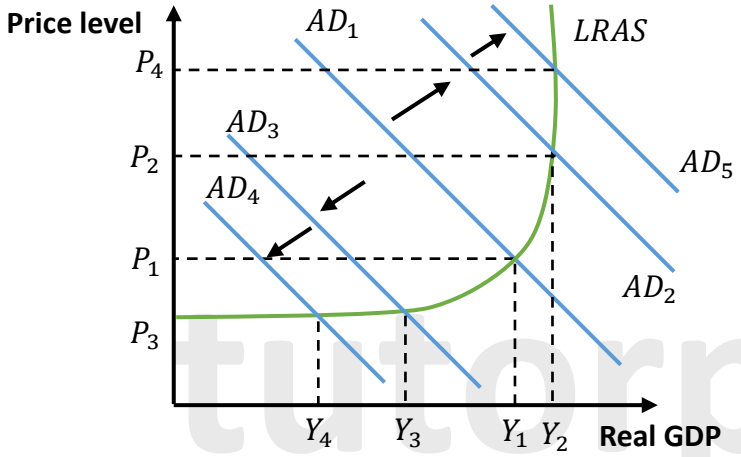
While the **negative output gap** has **shrunk**, output is **still below full employment (Y_f)**.

6.4 The interaction of AD and AS

Real national output equilibrium

Shifts in the equilibrium price level and real GDP

Keynesian approach - changes in AD



🔷 **Key Takeaways from the Diagram:**

- The economy starts in **equilibrium**, meaning the total demand for goods and services (**AD_1**) matches the total supply (**LRAS**).This happens at **price level P_1** and **real output Y_1**.
- If **AD increases** (e.g., due to higher **investment, or consumer confidence**), the AD curve shifts from **AD_1 to AD_2**.
- Since the economy is close to **full employment output (Y_2)**, firms **can't produce much more** in response to rising demand.
- **What changes?** ✅ **Prices rise significantly** ($P_1 \rightarrow P_2$).
  ✅ **Output increases slightly** ($Y_1 \rightarrow Y_2$).
  - This happens because resources like **labour, machinery, and raw materials** are already being used efficiently, so firms **can't expand much further**.

6.4 The interaction of AD and AS

Real national output equilibrium

🔻 **What Happens When AD Decreases?**

- If **AD decreases** (e.g., due to lower **consumer spending, investment, or exports**), the AD curve shifts from **AD_1 to AD_3**.
- **What changes?** ✅ **Real output falls significantly** ($Y_1 \rightarrow Y_3$).
  ✅ **Prices fall slightly** ($P_1 \rightarrow P_3$).
  - This occurs because **businesses reduce production** when demand drops, leading to **higher unemployment** and economic slowdown.

📉 **Further Decline in AD: What If It Keeps Falling?**

- If AD **keeps falling** ($AD_3 \rightarrow AD_4$), price levels **barely change**, but **output drops even more** ($Y_3 \rightarrow Y_4$).
- This is because wages and prices often **don't fall easily** due to **contracts, minimum wage laws, and firms trying to avoid pay cuts**.
- The economy enters a **deep recession**, with **low confidence, low investment, and high unemployment**.

📌 **Key Takeaways**

- **Near Full Employment?** More demand = **higher prices**, but **not much more output**. You can see this from **$AD_2 \rightarrow AD_5$.**
- **In a Recession?** Less demand = **big drop in output**, but **prices barely fall**.
- **Severe Recession?** Output **keeps falling**, but prices **stay stuck**.

This is why **government intervention** (like **spending and tax cuts**) is often needed to **prevent prolonged recessions** and **stimulate demand.**

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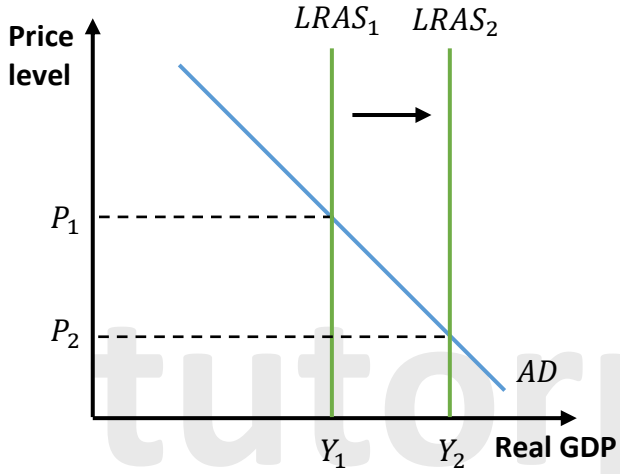
6.4 The interaction of AD and AS

Real national output equilibrium

Shifts in the equilibrium price level and real GDP

Classical approach - changes in LRAS



🔷 **Key Takeaways from the Diagram:**

- Initially, the economy is operating at **full capacity**, with potential output at Y_1.
- The economy is in **equilibrium** at **P_1Y_1**, where **Aggregate Demand (AD)** meets **LRAS**.

⚙️ **How Technology Impacts LRAS**

- Imagine a country introduces **advanced automation and artificial intelligence (AI)** into its manufacturing sector.
- **New technologies increase productivity**, allowing businesses to produce **more output with the same amount of resources**.
- This **shifts the LRAS curve to the right**, moving from **$LRAS_1$ → $LRAS_2$**.
- The result? **Higher potential output** at Y_2, meaning the economy can now produce more goods and services.

6.4 The interaction of AD and AS

Real national output equilibrium

📉 **What Happens to Prices and Output?**

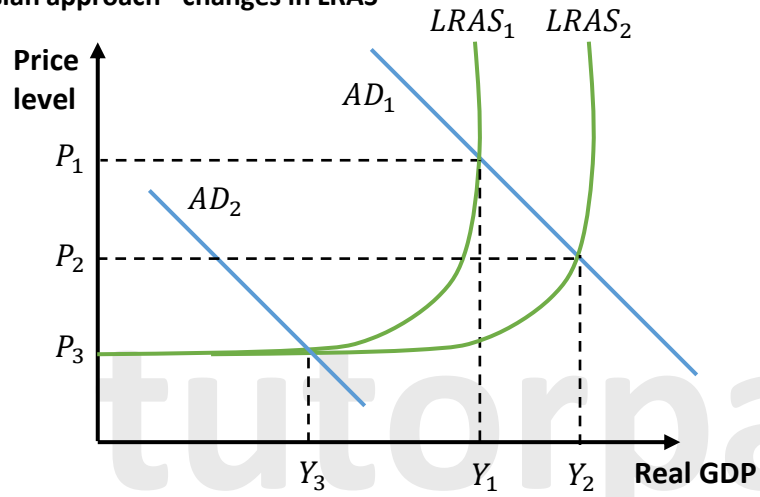
- With **better technology**, businesses **reduce production costs** and become more efficient.
- **Firms pass these savings on to consumers**, leading to **lower average prices (P_2 instead of P_1)**.
- As a result, output **expands**, and a **new equilibrium** is established at **P_2Y_2**.

6.4 The interaction of AD and AS

Real national output equilibrium

Shifts in the equilibrium price level and real GDP

Keynesian approach - changes in LRAS



🔷 **Key Takeaways from the Diagram:**

- The **initial potential output** of this economy is at Y_1 (full employment level of output).
- The economy is in **equilibrium**, meaning that aggregate demand (**AD**) and long-run aggregate supply (**LRAS**) are balanced at $\mathbf{P_1}\boldsymbol{Y_1}$.
- A **change in technological advancements** can **increase the productivity of labour** and shift the LRAS curve to the right, from **$\mathbf{LRAS_1}$ → $\mathbf{LRAS_2}$**.
- This means businesses can produce more goods and services using the same resources.

6.4 The interaction of AD and AS

Real national output equilibrium

As a result:

- The economy's **productive capacity** increases, moving output to Y_2.
- **Aggregate demand (AD)** remains in the **vertical portion** of the LRAS curve, so real output increases (Y_1 → $\boldsymbol{Y_2}$), and prices fall ($\mathbf{P_1}$ → $\boldsymbol{P_2}$).

- However, if the economy had started at an **equilibrium of $\mathbf{AD_2}\boldsymbol{Y_3}$** (where output was already below full potential), the increase in **LRAS alone would not** immediately boost national output.
  - In this case, Keynesian economists argue that the economy is **stuck in a recession** (low demand, low output).
  - To break free from this stagnation, **aggregate demand (AD) must increase** to stimulate production and growth.

6.5 The multiplier and the accelerator

The multiplier ratio and process

The **multiplier ratio** measures **how much real income increases** in response to an **initial injection** of spending into the economy.

Formula:

$$Multiplier = \frac{Total\ change\ in\ Income}{Initial\ Injection}$$

👉 **Example:**
If the UK government **injects** £10 million into the economy through government spending, and this leads to a total increase in national income of **£25 million**, then the **multiplier value is 2.5** (since £25m ÷ £10m = 2.5).

How Does the Multiplier Process Work?

- The **multiplier process** is the cycle where **one person's spending becomes another person's income**, leading to multiple rounds of increased spending. This creates a ripple effect in the economy, causing the **final increase in income** to be larger than the original injection.

🍽 **Step-by-step example:**

1. A new restaurant opens in town, and the owner **hires chefs and waiters**.
2. The employees **spend their wages** on groceries, rent, and entertainment.
3. Local **grocery stores and cinemas** see more business and **hire more workers**.
4. These workers also spend their earnings, **keeping the cycle going!**

💡 **The key idea?** The **more people spend rather than save**, the **greater the impact on the economy**.

6.5 The multiplier and the accelerator

The multiplier ratio and process

What Affects the Multiplier Size?

Not all money stays in the economy, some **leaks out**, weakening the multiplier effect. These are called **leakages**.

🔻 **Leakages include:**

- **Savings** – If people **save too much**, less money circulates.
- **Taxes** – If the government **heavily taxes** incomes, businesses, or goods, people have **less to spend**.
- **Imports** – If people buy **foreign goods** instead of local ones, money flows **out** of the economy.

The bigger the leakages, the weaker the multiplier effect. 🏢🔵

How the Multiplier Shifts Aggregate Demand (AD)

📈 **An initial injection** (like government spending, exports, or investment) **shifts the AD curve to the right**.
🔁 The **multiplier effect** causes an even **bigger secondary shift**, meaning total economic growth could be **double** the initial change.

👉 **Example:** A country **hosts the Olympics**, and billions are spent on **stadiums, hotels, and transport**.
→ Thousands of **workers are hired** → These workers **spend their wages** → Businesses grow → The economy **booms.**

Can the Multiplier Work in Reverse?

Yes! 🚨 If injections **decrease** (e.g., government cuts spending or businesses invest less), the **multiplier works in reverse**, causing a bigger economic slowdown than the initial reduction.

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6.5 The multiplier and the accelerator

The multiplier ratio and process

Can the Multiplier Work in Reverse?

Yes. 🚨 If injections **decrease** (e.g., government cuts spending or businesses invest less), the **multiplier works in reverse**, causing a bigger economic slowdown than the initial reduction.

📉 **Example of a negative multiplier:**
A car factory **shuts down** due to low demand.
→ Hundreds of **workers lose their jobs**.
→ They **cut spending** on restaurants, travel, and clothes.
→ **Local businesses suffer** and might lay off even more workers.

💡 **The lesson? One company closing can impact an entire town.** That's why governments sometimes **step in to prevent mass layoffs.**

6.5 The multiplier and the accelerator

Marginal propensities and their effects on the multiplier

What are Marginal Propensities?

Marginal propensities tell us **how people use their extra income** when they earn an additional dollar (or pound, or euro). They help economists understand **how money moves** in an economy.

Every time you earn extra money; you have a few choices:

- **Spend it** (buying stuff = boosting businesses!)
- **Save it** (keeping it in the bank)
- **Pay taxes** (governments love this one 💰)
- **Buy imports** (spending money on things from other countries)

These choices impact how strong the **multiplier effect** is in a country.

Example: Germany vs. Brazil

- **Germany** is known for having a **high savings rate**, meaning people prefer to **save more and spend less**.
- **Brazil** has a culture of **higher spending**, meaning money circulates faster because people spend more.
- **Result? Brazil has a higher multiplier!** When people spend more, businesses earn more, and the economy keeps growing.

6.5 The multiplier and the accelerator

Marginal propensities and their effects on the multiplier

Breaking down the marginal propensities

"For AQA, you only need to understand MPC, but the other terms are included to help deepen your overall understanding."

Term	What it means	Formula	Real life example
Marginal Propensity to Consume (MPC)	The proportion of extra income that people **spend** on goods and services. More spending = a stronger multiplier.	**MPC = ΔC / ΔY** (Change in Consumption / Change in Income)	If you get a £100 bonus and spend £80 on a nice dinner, your **MPC is 0.8** (80/100).
Marginal Propensity to Save (MPS)	The proportion of extra income that people **save** instead of spending. More saving = a weaker multiplier.	**MPS = ΔS / ΔY** (Change in Savings / Change in Income)	If you get a £100 bonus and save **£40**, your **MPS is 0.4** (40/100).
Marginal Propensity to Tax (MPT)	The proportion of extra income that goes to **taxes**. More taxes = less money circulating.	**MPT = ΔT / ΔY** (Change in Taxes / Change in Income)	If you get a £100 bonus and the government takes **£20**, your **MPT is 0.2** (20/100).
Marginal Propensity to Import (MPM)	The proportion of extra income spent on **imports** (buying goods from other countries). More imports = money leaving the economy.	**MPM = ΔM / ΔY** (Change in Imports / Change in Income)	If you get a £100 bonus and spend **£30** on imported French wine, your **MPM is 0.3** (30/100).

6.5 The multiplier and the accelerator

Calculations of the multiplier

The **multiplier effect** shows how much the economy grows when extra money is injected. But how do we actually **calculate** it?

There are **two ways** to find the multiplier:

1. Using the Marginal Propensity to Consume (MPC) – how much of extra income people **spend**.

Formula:

$$Multiplier = \frac{1}{1 - MPC}$$

2. Using Withdrawals (Leakages) – how much of extra income people **don't spend** (because they **save, pay taxes, or buy imports**).

Formula:

$$Multiplier = \frac{1}{MPW} = \frac{1}{MPS + MPT + MPM}$$

Which Method is Better?

Both methods give you the **same multiplier**, but they just look at it from different angles:
✅ **MPC method** focuses on **spending** and how much stays in circulation.
✅ **MPW method** focuses on **leakages** and how much is lost.

Big takeaway: If you want a **strong multiplier effect**, encourage **more spending and less saving, taxing, and importing.**

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6.5 The multiplier and the accelerator

The significance of the multiplier for shifts in AD

Let's say the government decides to **invest in public transport**, building new railway lines 🚊, buying electric buses 🚌, and improving metro stations. This spending **increases Aggregate Demand (AD)**, but how much impact it has **depends on the economy's spare capacity** (how much room there is for extra production).

What Affects the Multiplier's Impact?

1) There Must Be Spare Capacity

If the economy has **plenty of unemployed workers and idle factories**, then businesses can **easily increase production** when demand rises. This means the **multiplier effect will be strong.** The initial spending on transport will lead to **even greater economic growth.** 📈

- 🎯 **Example:**
  If there are lots of skilled workers looking for jobs, the government's transport investment will create **new employment**. Those workers will **spend their wages**, leading to **further increases in AD,** a strong **multiplier effect.**

2) If the Economy is at Full Capacity, Prices Go Up Instead

But what if the economy is already **running at full speed**? 🚦 If there are **no extra workers, no unused machines, and no spare land**, then businesses **can't produce more,** they'll just **raise prices instead**.

- 🎯 **Example:**
  If all construction workers are already employed, the government's transport project will **drive up wages and material costs** instead of increasing output. This means the **multiplier effect is weak**, and the only real result is **higher prices (inflation).**

6.5 The multiplier and the accelerator

The significance of the multiplier for shifts in AD

Elasticity Matters…

- **If supply is elastic** (meaning businesses **can easily expand production**), the **multiplier boosts output** more than prices.
- **If supply is inelastic** (meaning businesses **can't expand much**), then the **multiplier mainly raises prices** instead of increasing GDP.

Why Does This Matter?

- The **government** needs to understand the multiplier so they can **predict how much economic growth their spending will create**. If they invest in education, infrastructure, or healthcare, they need to know:

✅ **Will it generate a big impact on GDP?**
✅ **How long will it take for the effects to be felt?** (Multipliers take time.)

🔁 **Multiplier–Accelerator Model**

Imagine this like a domino effect:

- A small increase in **investment** (like building new factories or buying machines) boosts **income**.
- That boost in income increases **spending**, which leads to more **investment**, and the cycle continues. This is the **multiplier** at work.
- At the same time, the **accelerator effect** says that when demand grows, firms invest even more to meet that demand.

Put the two together? A small change gets amplified into big economic swings, kind of like a snowball rolling downhill.

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Actual growth rate vs long-term growth

📌 **What is Actual Growth?**

Actual growth refers to **the increase in a country's production of goods and services in the short term**, measured by changes in **Gross Domestic Product (GDP).** It happens when businesses produce **more stuff**, consumers spend **more money**, and the economy is **booming**.

🔷 **Example:** If the UK's GDP **grows by 3% in a year**, that's actual growth! It shows that businesses have been producing more, people have been spending more, and the economy has expanded.

💡 **However, actual growth can go up and down due to recessions, booms, and external shocks like financial crises or pandemics.**

📌 **What is Long-Term Growth?**

Long-term growth is **the steady increase in an economy's productive capacity over time**. Instead of looking at short-term fluctuations, it focuses on how much an economy **can** produce if all its resources (workers, land, machines, technology) are fully used.

🔷 **Example:** Over the last 50 years, China's economy has grown significantly because of **investment in infrastructure, education, and technology**. This is **long-term growth** because it has **increased the country's ability to produce more** year after year.

💡 **Long-term growth is shown by an outward shift in the Long-Run Aggregate Supply (LRAS) curve or the Production Possibility Frontier (PPF).**

6.5 The multiplier and the accelerator

Positive and negative output gaps

🔍 **What is an Output Gap?**

An **output gap** is the **difference between what an economy is actually producing (real GDP) and what it could produce at full capacity (potential GDP).**

There are **two types of output gaps**:

✅ **Positive Output Gap** – When **real GDP is greater than potential GDP**.

A **positive output gap** happens when the economy is **producing more than its sustainable capacity;** businesses are working overtime, unemployment is extremely low, and demand is so high that it's **pushing prices up** (inflation).

🔷 **Example:**

- In **2008, before the financial crisis**, many economies were booming, **businesses couldn't keep up with demand**, and inflation was rising fast.

✅ **Negative Output Gap** – When **real GDP is below potential GDP**.

A **negative output gap** happens when the economy is **not using all its resources efficiently**, there's **spare capacity**, meaning businesses **could** produce more, but **demand is too low**.

🔷 **Example:**

- During the **COVID-19 pandemic**, many countries had a **negative output gap**, businesses were closed, workers were unemployed, and the economy was running below full capacity.

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6.5 The multiplier and the accelerator

Positive and negative output gaps

🤔 **Why Are Output Gaps Hard to Measure?**

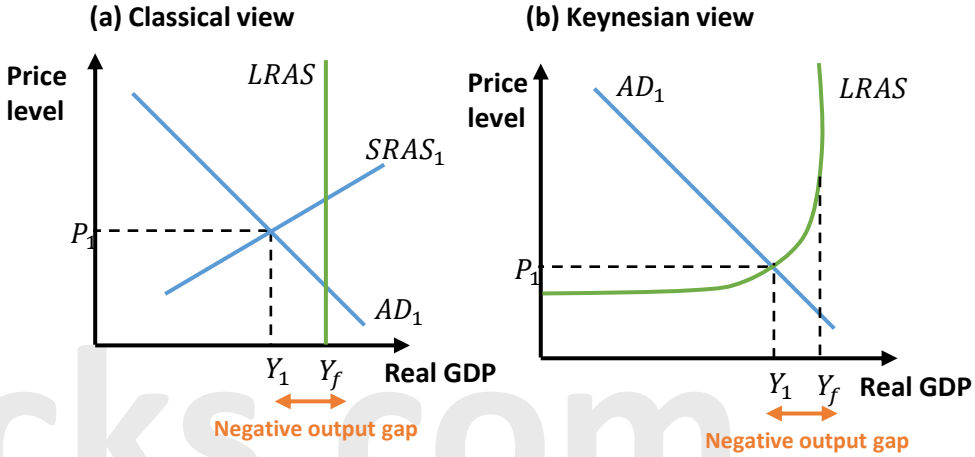
It's **difficult to know exactly how much an economy *could* produce** because:

- Technology changes (new innovations can increase capacity). 🤖
- Immigration and workforce size fluctuate. 👷
- Productivity improvements (better education, new skills). 🎓

6.5 The multiplier and the accelerator

Positive and negative output gaps

Negative output gap



📌 **What's the Situation?**

The economy's **potential output** (how much it *could* produce at full capacity) is at Y_f. However, right now, the economy is **not performing at full potential** and is in a **short-run equilibrium** at **P_1Y_1**, meaning it's producing **less than it could**.

This creates a **negative output gap** ($Y_1 - Y_f$), which means there is **spare capacity**, factories, workers, and resources are available but **not being fully used**.

🧐 **Why is This Happening?**

A **negative output gap** usually happens when **Aggregate Demand (AD) falls**, this means:

✅ People are **spending less** (maybe due to higher interest rates, uncertainty, or lower wages).

✅ Businesses **cut production** because demand for goods and services is down.

✅ **Unemployment rises** as companies hire fewer workers.

6.5 The multiplier and the accelerator

Positive and negative output gaps

Negative output gap

🏛 **Different Economic Views on What Happens Next**

📌 **The Classical View:**
Economists who follow **Classical Economics** believe that the economy **will naturally fix itself** in the long run. Prices and wages will **adjust downward**, making goods cheaper and encouraging **more spending and investment**. Eventually, the economy **returns to full employment (Y_f) at a lower price level**.

🔷 **Example:**
If wages fall, businesses **hire more workers**, increasing production and closing the output gap.

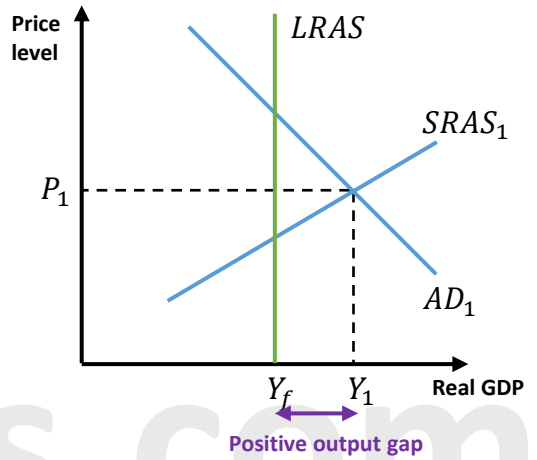
📌 **The Keynesian View:**
Economist **John Maynard Keynes** had a different take, he argued that **the economy could stay stuck in a negative output gap for a long time** if people **don't start spending again**. If businesses don't see demand rising, they won't invest, and unemployment could **stay high** for years.

🔷 **Example:**
During the **Great Depression (1930s)**, unemployment stayed **high for a decade** because **demand didn't recover quickly**, proving that economies don't always fix themselves fast.

6.5 The multiplier and the accelerator

Positive and negative output gaps

Positive output gap



📌 **What's the Situation?**

- The **potential output** of this economy is at Y_f. However, in the **short run**, the economy is operating above its full capacity at **P_1Y_1**, meaning it's producing **more than usual**.
- This creates a **positive output gap (Y_f - Y_1),** where demand is so high that businesses are **pushing beyond normal capacity** to keep up.
- This could happen when, **workers put in overtime** to meet rising demand or **factories run 24/7** to keep up with production.
- While high production sounds great, it **comes at a cost. Workers burn out** from constant overtime, **machines wear down** due to overuse or **inflation rises** as demand outstrips supply, pushing up prices.
- Classical view is that the economy naturally corrects itself over time, output returns to normal (Y_f) but at a higher price level.

6.5 The multiplier and the accelerator

Understanding the trade cycle

The **business cycle** (or **trade cycle**) refers to the **regular ups and downs in economic activity over time**. It shows how **real GDP (the value of goods and services produced) changes**, creating periods of **booms and recessions**.

💡 **Think of it like a rollercoaster**, sometimes the economy is growing fast (**boom**), sometimes it slows down (**downturn**), and sometimes it crashes (**recession**) before recovering again.

📊 **How Does GDP Fluctuate?**

The economy doesn't grow at a **constant rate**, instead, it moves **above and below the long-term trend of growth**.

🔷 **Example:**

- The **US economy boomed in the 1990s** due to rapid technology growth (internet, computers).
- In **2008, the Global Financial Crisis** caused a sharp **recession**, where businesses shut down and unemployment soared.
- **By 2010, economies started recovering**, and by 2021, some even **overheated** due to high post-pandemic demand.

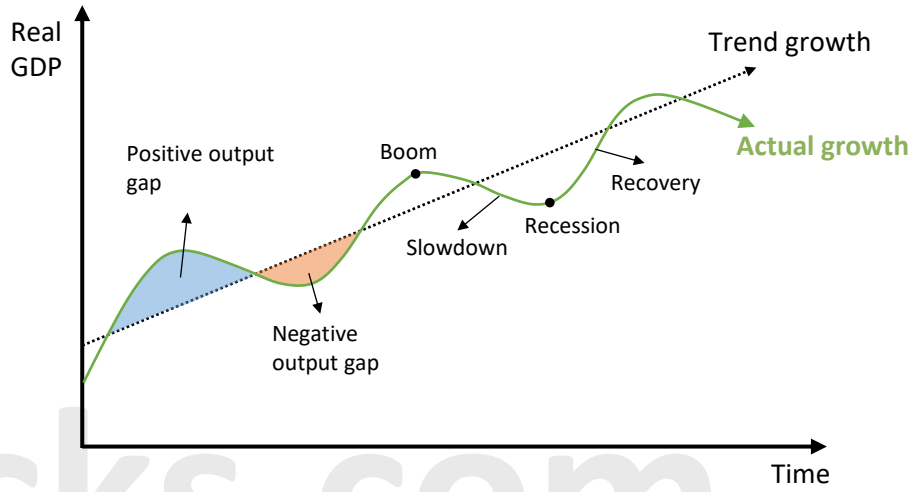
The output gap

✅ **A positive output gap** occurs when **real GDP grows faster than the long-term trend**, meaning the economy is **overheating** with high demand and pressure on resources.

✅ **A negative output gap** occurs when **real GDP grows slower than the long-term trend** or contracts, indicating **unused capacity, lower demand, and higher unemployment**.

6.5 The multiplier and the accelerator

Understanding the trade cycle



📍 **The Four Stages of the Business Cycle**

1. **Boom (Peak)** 🚀 – The economy is **growing fast**, businesses are thriving, and unemployment is **low**. However, inflation may start rising as demand outstrips supply.
2. **Slowdown (Downturn)** ⚠️ – Growth begins to **slow**, businesses make **fewer profits**, and unemployment starts to **rise**.
3. **Recession (Contraction)** 📉 – Economic activity **shrinks**, businesses may **close**, unemployment is **high**, and GDP **declines** for at least **two consecutive quarters**.
4. **Recovery** 🔄 – The economy **picks up again**, businesses start **hiring**, consumer confidence **improves**, and GDP **starts growing**.

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Please see the ‘6. Aggregate demand and aggregate supply Worked Examples’ pack for exam style questions.

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