HL IB Economics

Your notes

3.4 Inequality & Poverty

Contents

3.4.1 Measuring Inequality & Poverty

Your notes

Inequality & Poverty Terminology

- **Equality** describes situations where economic outcomes are similar for different people or different social groups
  - **Income equality** would mean everyone, irrespective of their job, is paid the same
  - Inequality in the **distribution of income** is one cause of absolute and relative poverty
- **Equity** refers to the idea of fairness and is a **normative concept**
  - **Equity in the distribution of income** means that there is fairness in the **wage differentials** that exist in society e.g. those with higher qualifications or skills are paid more than those with less
  - The size of **acceptable wage differentials** is a matter of much debate
- **Income and wealth inequality** are two different concepts
  - **Income inequality** refers to the unequal distribution (flow) of income to households i.e rent, wages, interest and profit
  - **Wealth inequality** refers to differences in the amount of **assets** that households own
- **Absolute poverty** is a situation where individuals cannot afford to acquire the **basic necessities** for a healthy and safe existence
  - These necessities include shelter, water, nutrition, clothing and healthcare
  - In 2022, the **World Bank** defined absolute poverty as anyone who was living on less than **$1.90 a day** (the so called international poverty line)
  - Absolute poverty is more prevalent in **developing countries** than in developed ones
- **Relative poverty** is a situation where household income is a certain percentage less than the median household income in the economy
  - Poverty in a household is considered relative to **income levels** in other households
  - Households that are living with less than 50% of the **median household income** are considered to be in relative poverty
  - Relative poverty is the main form of poverty that occurs in **developed** countries

Measuring Inequality – the Lorenz Curve & Gini Coefficient

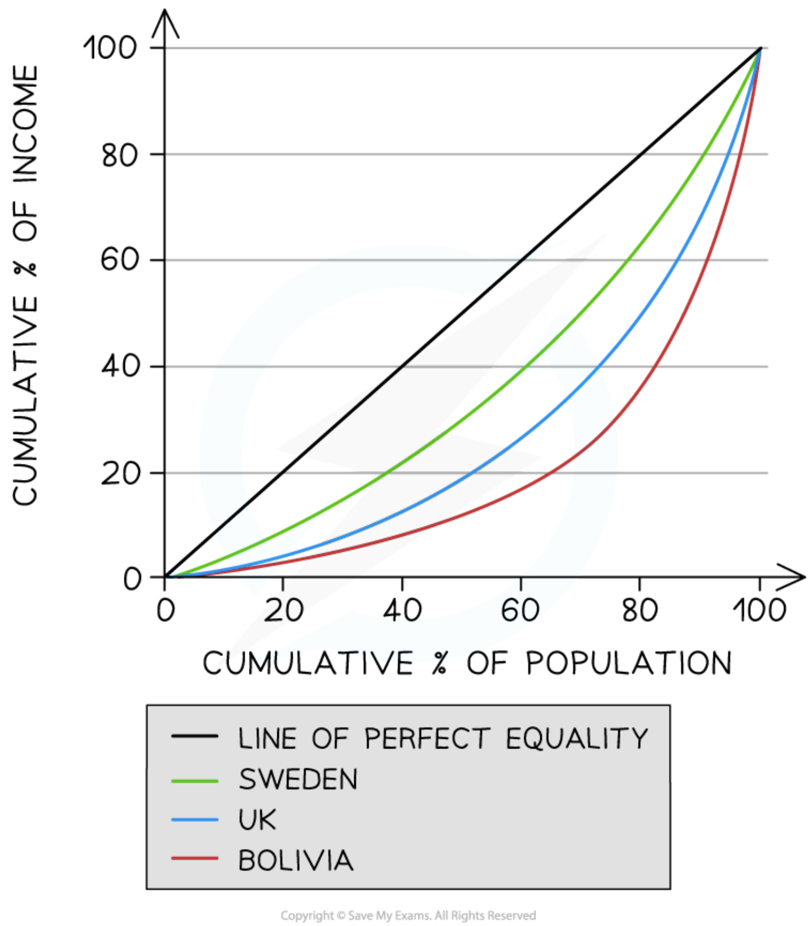
Your notes

- The two main measures of income inequality are the **Lorenz Curve** and the **Gini coefficient**

The Lorenz Curve

- The Lorenz Curve is a visual representation of the income inequality that exists **between households** in an economy
- Data is commonly presented in **quintiles** (population divided into 5 groups i.e 20%) or **deciles** (population divided into 10 groups i.e 10%)
  - E.g. in 2020, 49% of the **income flow** in Bolivia went to the **top 20%** of households while only 4% went to the **bottom 20%**
- **Perfect income distribution** is not the goal (20 % of the population gets 20% of the income; 40% gets 40% percent of the income etc.)
  - That would equate to socialism and completely **remove incentives for work** as everyone would be paid equally
- More equal income distribution is desired as it **reduces poverty** and social unrest
  - What constitutes acceptable income equality is a **normative** economic issue

Your notes



An illustration of Income Inequality for Bolivia (blue line) and Sweden (red line) and the UK (yellow line) using a Lorenz Curve Model. The income distribution in Bolivia is more unequal than that of Sweden

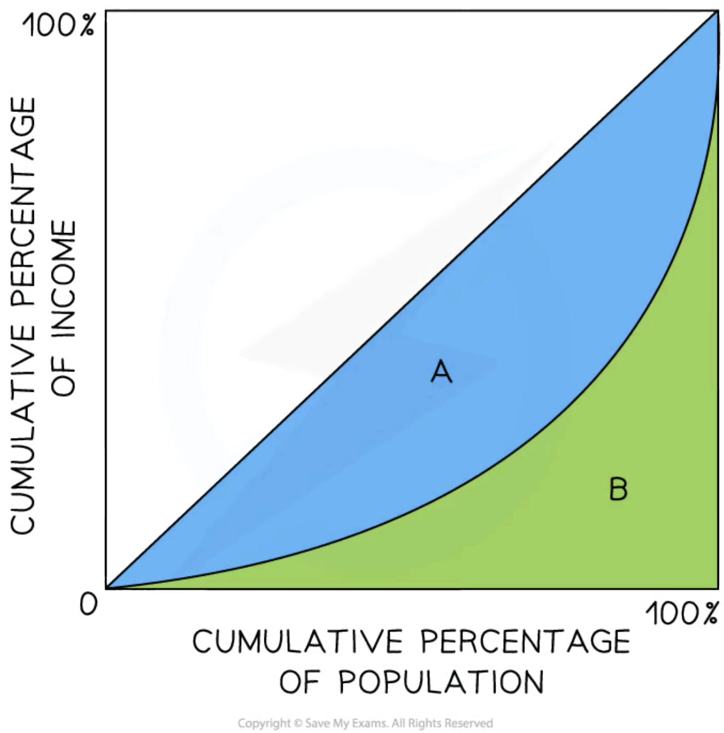
Diagram Analysis

- The **line of equality** represents perfect income distribution (not desirable)
- In Bolivia the **bottom 20%** of households receive 4% of the income flow while in Sweden they receive 9% of the income flow
- In the UK the **top 10%** of households receive 45% of the **income flow** while in Sweden they receive 25%
- Sweden has a **more equal** distribution of income than the UK

Your notes

The Gini Coefficient

- The Lorenz curve can be used to calculate the **Gini Coefficient**



The Gini Coefficient is calculated using the area beneath the line of equality

Diagram Analysis

- $\text{Gini Coefficient} = \dfrac{A}{A + B}$
- **A** represents the area between the line of equality and Bolivia's Lorenz curve
- **B** represents the area under the Lorenz curve
- A value of 0 represents **absolute equality** (socialism) and 1 represents **perfect inequality**
- In 2017, Estonia's coefficient was 0.3 as compared with a value of 0.62 in South Africa
  - The distribution of income in Estonia was more equitable than in South Africa

- Governments use **progressive taxation** and **transfer payments** to shift the Gini coefficient closer to zero

Your notes

WORKED EXAMPLE

Using a Lorenz curve diagram, explain what happened to income inequality in Bolivia between 2008 and 2016 **[4]**

Income Gini Coefficient Data for Bolivia

Income Gini Coefficient 2008	0.51
Income Gini Coefficient 2016	0.43

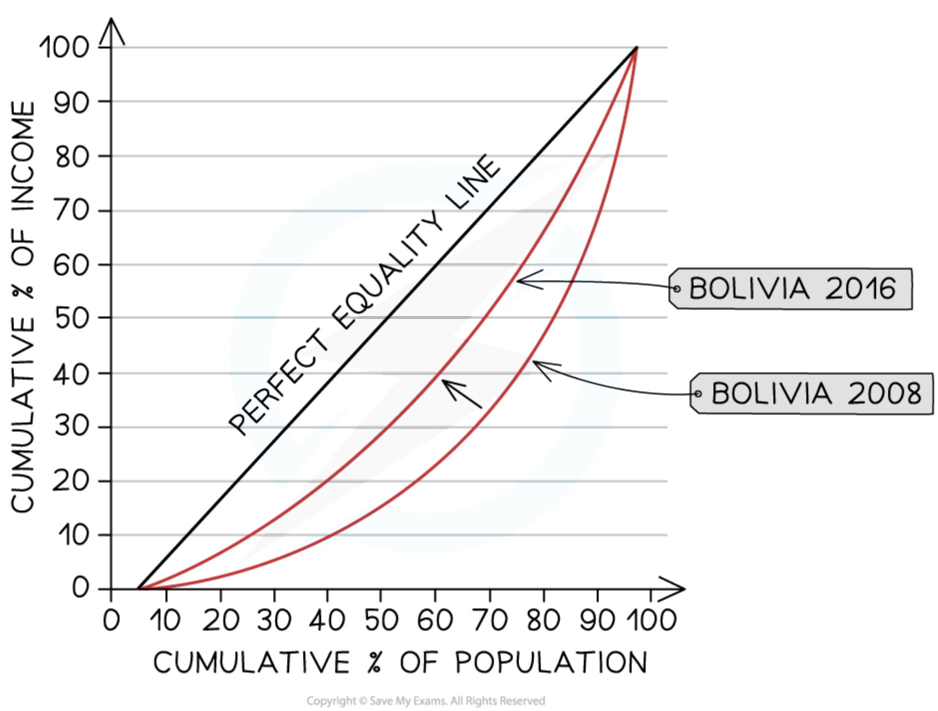
Answer:

Step 1: Determine if inequality has improved or worsened

The closer to zero, the closer the country is moving to perfect equality.

The situation in Bolivia has improved so the Lorenz curve is moving closer to the line of perfect equality

Step 2: Draw and label the Lorenz Curve for each year



(2 marks for a correctly labelled diagram with a shift inwards of the Lorenz curve)

Step 3: With reference to your diagram, explain what has happened to the income inequality between the two time periods

The closer the Gini coefficient is to zero, the more equal the distribution of income in a country. **[1 mark]** Bolivia's Gini coefficient has moved closer to zero indicating that there is less income inequality in 2016 than there was in 2008 and this is illustrated by an inward shift of the Lorenz curve towards the line of perfect equality **[1 mark]**

Your notes

Constructing a Lorenz Curve from Quintile Data

- The Lorenz Curve plots the percentage of a nation's total income against the percentage of the nation's population, and thereby shows how much **each quintile (or one fifth**) of the population earns of the total income

% of Population	Poorest 20%	2nd 20%	3rd 20%	4th 20%	5th 20%	Gini Index
Bangladesh	8.6%	12.4%	16.2%	21.4%	41.4%	32.4
Canada	7.4%	12.6%	17%	23%	40%	32.5
South Africa	2.3%	4.8%	8.2%	16.5%	68.2%	63.00
Vietnam	6.6%	11.5%	15.9%	22.1%	43.9%	36.8

Source: World Bank

- The country with a Gini Index **closest to zero** has the most income equality
  - Bangladesh has the best income equality and South Africa has the worst
- The **Lorenz curve** for Bangladesh will be closest to the **line of perfect equality** and furthest away for South Africa

WORKED EXAMPLE

Your notes

Using information from the table above, construct a Lorenz Curve diagram which shows the distribution of income for the country with the highest inequality and the country with the lowest inequality [4]

Answer:

Step 1: Identify the countries with the best and worst income inequality

South Africa has the worst and Bangladesh has the best **[1 mark]**

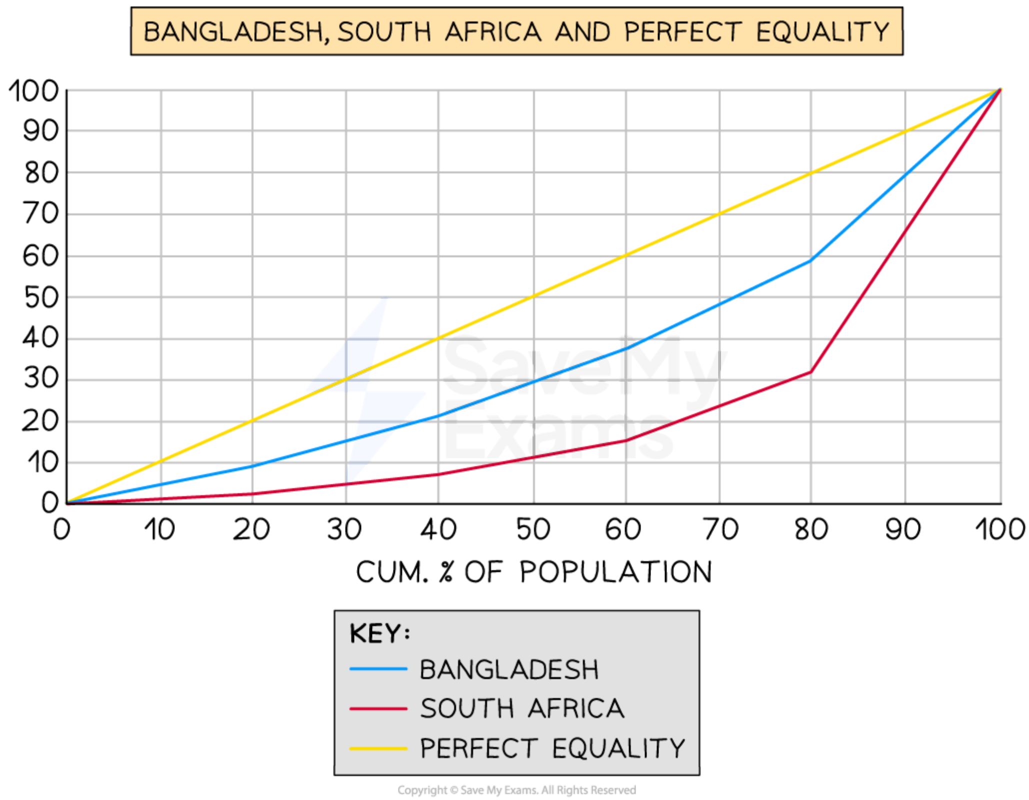
Step 2: Change the income data so that it is cumulative from quintile to quintile

% of Population	Poorest 20%	2nd 20%	3rd 20%	4th 20%	5th 20%	Gini Index
Bangladesh	8.6%	21%	37.2%	58.6%	100%	32.4
South Africa	2.3%	7.1%	15.3%	31.8%	100%	63.00

[1 mark]

Step 3: Draw the Lorenz Curve Diagram

Your notes



[2 marks]

Measuring Poverty

- There are many **single indicators** of economic development. These can be used to compare the relative standing of countries at any point in time. They also serve to provide **targets** for improving the lives of citizens. Examples include
  - Energy consumption per person
  - The proportion of the population with access to clean water
  - Number of girls completing primary education
- Another single indicator is the **International Poverty Line (IPL)**
  - This is the **absolute minimum level of income** that a person must receive in order to meet the basic needs required for human survival - currently $1.90 a day
- The **Minimum Income Standard (MIS)** is another useful indicator

Your notes

  - The Minimum Income Standard (MIS) identifies the **lowest amount of income** needed for what society views as an acceptable standard of living in the country
  - The value differs from region to region as adjustments are made for those living in **urban versus rural** areas due to the different costs of living associated with each
- A **composite indicator** can provide more meaningful data for comparisons between countries
  - One useful composite indicator is the **Multi-dimensional Poverty Index (MPI)**

Characteristics of the MPI

1. Launched in 2010 by the **Oxford Poverty and Human Development Initiative** at the University of Oxford
2. The MPI uses a survey to measure the **complexities** of poor people's lives, individually and collectively, each year
3. The MPI tracks **deprivation** across three dimensions and 10 indicators
   - **Health** (child mortality, nutrition)
   - **Education** (years of schooling, enrolment)
   - **Living standards** (water, sanitation, electricity, cooking fuel, housing, assets)
4. The survey first identifies which of these 10 **deprivations** each household experiences
5. Households are then categorised as poor if they suffer **deprivations across 1/3** or more of the weighted indicators
6. The MPI can focus in on regions, ethnicities and also any of the **three dimensions**
7. This adaptability makes it a useful tool for policymakers and non-government organisation (NGOs) working to **reduce poverty**

Difficulties in Measuring Poverty

- Poverty is **multi-dimensional concept** and difficult to quantify
- Poverty is usually measured through **self reported surveys** and this gives rise to multiple discrepancies in - and between - countries
- Households who identify as poor may exhibit **very different characteristics** from each other
- **Urban** households may have very different ideas of their poverty level compared to **rural** households
- Urban areas tend to have **higher immigrant households** whose status can change relatively quickly as they seize opportunities
- Rural households may remain in **long-term poverty**

- Poverty data for different ages, gender and disabilities is not easily available

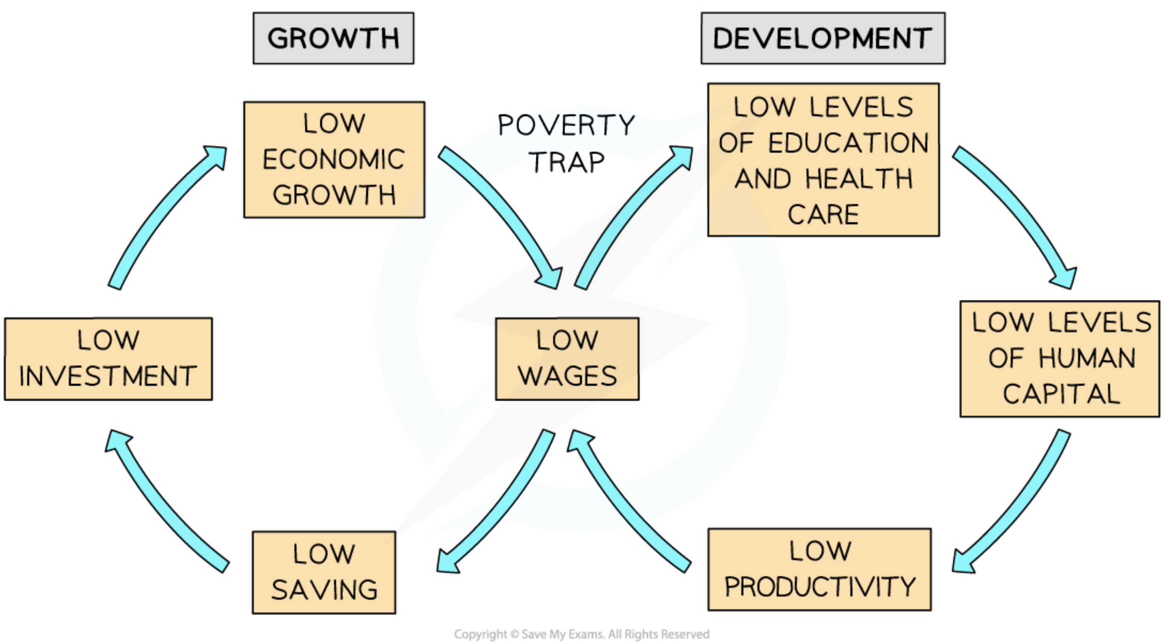
3.4.2 Causes Of Inequality & Poverty

Your notes

The Causes of Inequality & Poverty

Causes of Poverty

- There are many **causes of poverty.** However, poor countries have several **common characteristics** which can be summarised in a **poverty cycle diagram**



Poverty is caused by a lack of both economic growth and human development

- **Low wages** represent the intersection of economic growth and human development and are the major cause of poverty
  - Low wages are usually the result of **unemployment**, **informal employment**, a lack of skills, or a **primary sector** based economy

- **Education and healthcare** cost money and with lower wage levels these are not accessible, resulting in poor **human capital**
  - People find it harder to stay well or to **recover from illness** resulting in **lower productivity** and **shorter life expectancy**

Your notes

- **Low productivity** results in low wages and the cycle continues
- **Populations** with a large number of **dependents** (old people and children) for each working household tend to experience **higher levels of poverty**

Causes of Inequality

- There are numerous factors that cause **wealth and income inequality**
- It is **generally true** that developed countries have a larger tax base and are able to provide a better level of support to the poorest households in the economy, than developing countries are able to

Cause of Wealth & Income Inequality

Cause	Explanation
Differences in human capital	▪ The **higher** the skill level the higher the level of income ▪ A country with a **poor education** system will see greater inequality than one with a good education system
Inequality of opportunity	▪ Access to **education and health** can vary significantly within communities and between different regions ▪ Inequality in education and healthcare leads to **inequality of opportunity in the job market**
Different levels of resource ownership	▪ **Assets generate income** ▪ The more equal the asset ownership in an economy the less the inequality in income distribution
Discrimination	▪ Gender, race - or **any other discrimination** increases income inequality in an economy
Unequal status and power	▪ Countries with strong **trade union** membership provide workers with more power and higher levels of income ▪ With low trade union membership, the **exploitation** of workers through low wages is easier and income inequality is worse

Government tax and benefits policies	▪ Countries that provide a range of benefits (such as **unemployment**, pension, disability, child support, **housing support** etc**)** raise the income of the lowest 20% of the population resulting in more equal distribution ▪ **Progressive tax systems** allow all income earners to contribute to **public revenue** according to their ability ▪ **Decreasing taxes** on the lower end and increasing it on the upper end would mean that the system is **more progressive and there would be a more equal distribution of income**
Globalisation and technological change	▪ **Globalisation** is the economic integration of different countries through increasing freedoms in the cross-border movement of people, goods/services, technology and finance ▪ This **integration** of global economies has impacted **national cultures**, spread ideas, speeded up **industrialisation** in developing nations and led to **de-industrialisation** in developed nations ▪ Countries which are more isolated will experience higher levels of wealth and income inequality
Market based supply-side policies	▪ **Supply-side policies** such as **deregulation**, **privatisation** and **trade liberalisation** can provide great opportunities but also increase inequality ▪ E.g. Privatisation of state owned assets often allows a few people to get rich (those who buy the asset) and the service provided by the newly privatised firm may become more expensive to access

Your notes

The Costs of Income & Wealth Inequality

- **Capitalism** is at the heart of free market economics
- Under Capitalism, **inequality is inevitable**
  - Workers with **higher skills** receive higher wages
  - Workers with little to no skills receive little to no wage
  - Individuals with higher income will acquire more **assets** leading to higher levels of income
    - In turn, they can keep on acquiring assets
  - Individuals with lower income will find it hard to acquire assets

- The principles of capitalism are considered important as the **incentive** to acquire income raises productivity and output
- However, the long-term outcome of capitalism is that the **factors of production** become concentrated in ownership with relatively few individuals developing extreme wealth, at the expense of many who lose out

The costs of inequality

1. **Impact on economic growth**
   - At some point, increasing levels of inequality becomes a disincentive for workers to work and be productive
   - This means that some resources (labour) in the economy are not being used efficiently. National output falls and economic growth slows
   - Government **unemployment payments** and welfare benefits may increase
   - Government tax revenues may decrease with increasing inequality

2. **Impact on living standards**
   - If the inequality gap grows, the rich get richer and the poor, relatively poorer
   - Over time, this will reduce the standard of living
   - The wealthier will access better education and healthcare creating even less opportunity for poorer households in the future
3. **Impact on social stability**
   - More equal societies tend to be more stable, tolerant and considerate with lower levels of crime and better standards of living
   - Less equal societies tend to be characterised by political instability, strife, social unrest - and in extreme cases this can lead to revolutions

Your notes

3.4.3 Using Taxation to Reduce Inequality & Poverty

The Role of Taxation

- The main source of government revenue is **taxation**
- Taxation is used to **redistribute income** so as to **reduce income inequality** in a nation

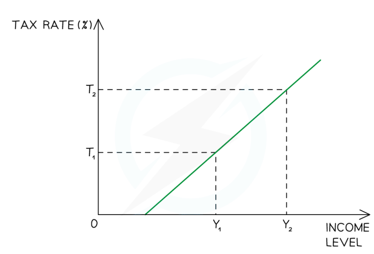
Types of taxes

- **Direct taxes** are taxes imposed on **income and profits**
  - They are **paid directly** to the government by the individual or firm
  - E.g. Income tax, corporation tax, **capital gains tax**, national insurance contributions, inheritance tax
- **Indirect taxes** are imposed on **spending**
  - The **less** a consumer spends the **less indirect tax** they pay
  - Examples of indirect tax include **Value Added Tax** (19% VAT rate in the European Union in 2022), taxes on **demerit goods** such as excise duties on fuel or cigarettes

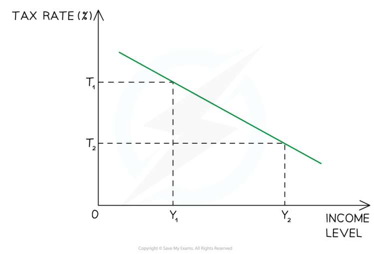
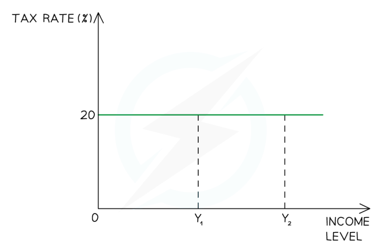
Types of tax systems

- Tax systems can be classified as **progressive**, **regressive or proportional**
- Most countries have a **mix** of progressive **(direct taxation)** and regressive **(indirect taxation)** taxes in place

An Explanation of tax Systems

System	Explanation	Diagram
Progressive	▪ As income rises, **a larger percentage** of income is paid in tax (called the marginal tax rate) ▪ In the diagram, when personal **income rises** from Y_1 to Y_2, the **tax rate rises** from TR_1 to TR_2	

Your notes

Regressive	▪ As income rises, **a smaller percentage** of income is paid in tax ▪ In the diagram, when personal **income rises** from Y_1 to Y_2, the **tax rate falls** from TR_1 to TR_2 ▪ All indirect taxes are regressive ▪ In the USA, **Federal income tax** is progressive but almost all **State taxes** are regressive (the bottom 20% of income earners pay as much as 6x the % of their income than the top 20%)	
Proportional	▪ As income rises, **the same percentage** of income is paid in tax ▪ In the diagram, when personal **income rises** from Y_1 to Y_2, the tax rate remains constant at 20% ▪ In 2022, Bolivia was using this system with a **proportional tax** rate of 13%	

The link Between Taxation & the Reduction of Income Inequality & Poverty

Progressive taxation	▪ A **progressive tax system** redistributes from those with higher income to those with lower income and reduces **income inequality** ▪ Redistribution often starts with the provision of **free education and healthcare** ▪ Many governments use **tax revenues to provide multiple levels of financial** support to poor households including disability payments, heating subsidies, travel subsidies etc.	Higher redistribution → **better education/healthcare** → better human capital → better productivity → higher income

	- Sometimes the benefits of a good **progressive tax** system are eradicated by the penalties imposed through **multiple regressive (indirect) taxes**	

Your notes

Direct & Indirect tax rate Calculations

- **Indirect tax rate calculations** focus on calculating the taxes **paid by consumers on expenditure**
  - Indirect taxes usually have to be identified from a table, before the calculations are made
- **Direct tax rate calculations** usually focus on the calculation of **marginal and average tax rates** from a set of data provided
  - Marginal tax rates represent the amount of **additional tax paid for every additional dollar earned as income**
  - Marginal tax rates increase as income increases
  - Average tax rates are calculated using the following formula

$$\text{Average tax rate} = \frac{\text{total taxes paid}}{\text{total income}} \times 100$$

WORKED EXAMPLE

Using information from the table below, calculate the average tax rate paid by an employee who earns $25,000 a year [4]

Income ($ per year)	Rate of Income Tax
1 - 10,000	5%
10,001 - 18,000	10%
18,001 - 35,000	20%
35,001 and over	30%

Answer:

Step 1: Calculate the tax paid on the first $10,000

5% x 10,000 = $500

Your notes

Step 2: Calculate the tax paid on income between $10,001 - $18,000

10% x $7,999 = $799.90

Step 3: Calculate the tax paid on income between $18,001 and $25,000 (the employees income)

20% x 6,999 = $1,399.80 **[1 mark]**

Step 4: Add the marginal tax paid together to obtain the total tax bill for the employee

$500 + $799.90 + $1,399.80 = $2,699.70 **[1 mark]**

Step 5: Calculate the average rate of tax for the employee

$$\text{Average tax rate} = \frac{\text{total taxes paid}}{\text{total income}} \text{ x } 100$$

$$\text{Average tax rate} = \frac{2{,}699.70}{25{,}000} \text{ x } 100$$ **[1 mark]**

$$\text{Averagre tax rate} = 10.7988\ \%$$

Step 6: Present your answer rounded to two decimal places

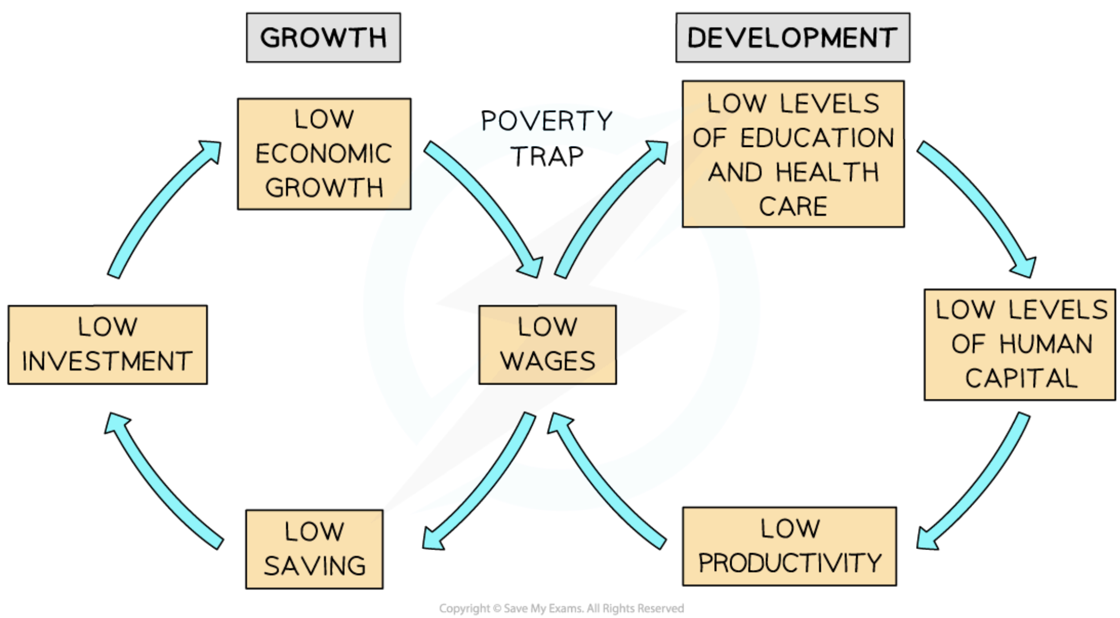
Average tax rate = 10.80% **[1 mark]**

3.4.4 Other Policies to Reduce Inequality & Poverty

Your notes

Other Policies

- The **poverty cycle diagram** (below) was introduced in the previous subtopic and helps to explain the **causes of poverty**
- **Any policy** that helps to **break the poverty cycle** at any point will help to improve the **standards of living** within a country
- **Policies** used to alleviate poverty include **promoting economic growth**, improving education, providing more generous state benefits, progressive taxation, and the establishment/increase of a **national minimum wage**



Policies which help to improve any factor in the diagram will help to alleviate poverty

How Different Policies Alleviate Poverty

Policy	Explanation	Impact on Poverty Cycle

Investing in human capital e.g. education	▪ Investing in this **supply-side policy** increases the potential output of the country (shifts the **production possibility frontier** outwards)	Higher education/skill levels → **higher human capital** → increased productivity → higher output → higher income
More generous transfer payments	▪ **Transfer payments** are usually given to the **poorest and most vulnerable** people in society ▪ Transfer payments include **unemployment and disability payments**, pension payments, heating discounts, public transport subsidies etc.	More benefits → **higher wages** → better education/healthcare → better human capital → better productivity → higher wages
Establishment/increase of national minimum wage	▪ **Minimum wages** are set above the free market rate ▪ Firms are not allowed to pay anyone less than the **legal rate**	**Higher wages** → better education/healthcare → better human capital → better productivity → higher wages
Establishing a universal basic income	▪ A **universal basic income (UBI)** is a guaranteed minimum income level - and when necessary, paid by the government to each individual in society	**Minimum income for all** → better education/healthcare → better human capital → improved labour offer → decreasing unemployment
Targeted government spending on goods/services	▪ This can be aimed at the **greatest needs** in society ▪ E.g. Providing more schools, teachers or hospitals	Higher education/skill levels → **higher human capital** → increased productivity → higher output → higher income
Policies to reduce discrimination	▪ Discrimination occurs in many different forms (age, ethnicity, gender, disability etc) and in each case results in social exclusion leading to **inequalities of opportunity and income**	**Less discrimination** → better productivity → higher wages

Your notes

	- Reducing discrimination reduces inequality	

Your notes