

ECONOMICS

ECONOMIC ISSUES IN THE AUSTRALIAN ECONOMY

Economic Growth

Economic Growth refers to the increase in output (Real GDP) of an economy, over a given period of time. Real GDP refers to the value of goods and services produced and adjusted for inflation.

$$\text{Economic growth (\%)} = \frac{\text{real GDP (current year)} - \text{real GDP (previous year)}}{\text{real GDP (previous year)}} \times \frac{100}{1}$$

Aggregate Demand and its components $Y = C+I+G+X-M$.

Aggregate Demand (AD) refers to the total sum of expenditure on domestic output by households, firms, the government, and the foreign sector in an open economy.

Equation for Aggregate Demand:

$$\text{AD} = C + I + G + (X-M)$$

Aggregate Supply (AS) refers to the total level of income earned by factors of production in an economy.

Equation for Aggregate Supply:

$$\text{AS} = C + S + T$$

$$\text{Aggregate Demand (AD)} = \text{Aggregate Supply (AS)}$$

$$\text{Injections} = \text{Leakages}$$

$$\text{Savings (T)} + \text{Taxation (T)} + \text{Import (M)} = \text{Investment (I)} + \text{Government Spending (G)} + \text{Export (X)}$$

$$S+T+M = I+G+X$$

The Components of Aggregate Demand:

Consumption: $C = C + (MPC)Y$

Investment: I

Government: G

Exports: X

Imports: $M = M + mY$

Influences of consumption and saving:

Level of income $Y = C + S$

- Generally, the more equitable an economy's income distribution, the higher the average consumption.

- The more inequitable the distribution of income the lower the average consumption. This is due to the fact that low income earners spend a larger proportion of income than those on higher income.

Savings Behaviour

- An increase in general interest rates would discourage individuals from spending and encourage them to save.
- A decrease in general interest rates would encourage individuals to spend more money and therefore discourage them to save.

Consumer Confidence

- Expectations about future prices and general availability of goods will influence consumer's decision to spend or save.
- If consumers expect prices to rise, they will consume more now.
- If consumers expect prices to fall, they will consume less now.

Influences on investment:

Interest Rates

- A rise in interest rates would raise borrowing costs. Interest rates also represent an opportunity cost for firms who own capital.
- A fall in interest rates would lower the cost of borrowing, therefore cheaper to purchase capital equipment (Incentive to borrow which encourages investment).

Expected Demand

- If businesses expect an increase in demand, it will encourage entrepreneurs to purchase new capital equipment to boost production and satisfy demand.

Economic Growth

- If firms expect strong economic growth, it will lead to increase in investment.

Inflation

- High inflation will lead to uncertainty about future prices, future costs of production, leading to reduced investment.
- Stable inflation will lead to more confidence about future prices and is likely to lead to increased investment in productive capital equipment.

Influences on Government expenditure and taxation (*Not affected by income).

Automatic Stabilisers (non-discretionary)

- High economic growth, government will increase taxation and decrease government spending (i.e. welfare payments).

- Low economic growth, government will lower taxation and increase government spending to increase aggregate demand.
- *Note: Govt spending usually makes up between 1/5 and 1/4 of aggregate demand.

Macroeconomic Policies (discretionary)

- If economic growth is low, the government will encourage growth through expansionary monetary policy by lowering interest rates or increase fiscal spending.
- Influences on imports and exports.

Cyclical Factors

- High domestic economic growth generally boosts imports, because domestic income rises.
- When overseas income levels rise, Australia's exports tend to rise as well.

Exchange Rate/International competitiveness (PQRS)

- An appreciation (cheaper imports/dearer exports), generally encourages Australians to purchase more imports. Domestic industries are less competitive, and products have less appeal to foreign consumers. Thus, export revenue falls.
- *Injectons and withdrawals (I+G+X; S+T+M)*

The equilibrium condition in the five-sector circular flow model occurs when total leakages of savings, taxation, and imports (S, T, M) are equal to the total injections of investment, government spending, and exports (I, G, X), demonstrated as:

Leakages = Injections

$$S+T+M = I+G+X$$

- If injections > leakages, the economy will expand.
- If leakages < injections, the economy will contract.

The Simple Multiplier $K=1/(1-MPC)$

The notion states that changes in any or all of the autonomous (independent) components of aggregate demand $C+I+G+(X-M)$ will cause a change in the equilibrium level of income through the effect of the simple expenditure multiplier.

To calculate the simple multiplier, must consider:

- **Marginal Propensity to Consume (MPC)** – Refers to the proportion of each extra dollar of income that is spend.
- **Marginal Propensity to Save (MPS)** – Refers to the proportion of each extra dollar of income that is saved.

The simple multiplier can be expressed as:

$$K = \frac{1}{1-MPC} \text{ or } \frac{1}{MPS}$$

***Note: MPC + MPS = 1**

To calculate the total change in the level of national income in the economy:

$$\Delta Y = K \times \Delta AD$$

- The larger the MPS, the smaller the value of the simple multiplier.
- The smaller the MPS, the larger the value of the simple multiplier.

Question Example:

Measurement of growth through changes in real Gross Domestic Product

Gross Domestic Product (GDP) refers to the total market value of all final goods and services produced in an economy over a period of time.

$$\text{Real GDP} = \text{nominal GDP} \times \frac{100}{\text{current CPI}}$$

Economic Growth refers to an increase in the volume of goods and services that an economy produces over a period of time, measured as the rate of change in real GDP.

$$\text{Economic growth (\%)} = \frac{\text{real GDP (current year)} - \text{real GDP (previous year)}}{\text{real GDP (previous year)}} \times \frac{100}{1}$$

Economic growth is measured by the ABS and GDP statistics which are released quarterly and annually.

Main methods of measuring economic growth:

1. **GDP production method** – Total value of production of goods and services over a given period of time.
2. **GDP Income method** – Total value of income received by owners of factors of production.
3. **GDP Expenditure method** – Total expenditure by consumers, businesses, and the government (C+I+G+X-M).

Sources and effects of economic growth in Australia

Sources of Economic Growth:

The main sources of economic growth are any factors that influence aggregate demand (C+I+G+X-M) in the economy. Mainly driven by (3P's):

- **Population:** Widening of population is a form of discovering additional resources, which leads to great consumption and output.
- **Participation:** Changes in the labour force participation rate show the efficiency of the supply of labour (ageing population).

- For example, the government may introduce new visa to increase migrants with skilled labour.
- **Productivity:** Improvements in technology and increases in capital deepening allows firms to produce more output with the same level of resources.
- *Recap: Capital deepening – produce more within the same amount of time, increasing output and time.

Effects of Economic Growth:

Positive

- **Creation of Employment:** An increase in economic growth implies an increase in AS. As firms increase supply, they require factors of production, including labour to increase scale of production. Increased productivity will lead to increased demand for labour and hence unemployment is reduced.
- **Higher Real Income per capita & Standard of living:** As economic growth increases income flows all throughout the country increasing income distribution. Higher real incomes allow individuals to enjoy greater purchasing power in raising their material standard of living through purchases of more goods and services.
- **Higher levels of saving:** Increased economic growth can lead to a rise in household saving ratio, allowing individuals to reduce level of debt and save for retirement.
- **Increased consumption for households.**
- **Higher output for firms leading to higher profits.**
- **Increased productivity growth and technological progress:** Increased economic growth will lead to rising demand for goods and services as consumers become wealthier, and hence lead to productivity growth. This increase in demand forces firms to find more efficient methods of production and utilisation of resources, which is often achieved through technological progress.
- **Increased taxation for the Government:** As economic growth increases national income also increase, hence revenue is increased. This additional tax revenue can be used to provide more social infrastructure and fund social security projects.
- **Less social welfare payments.**
- **Increase in export revenue.**
- **Lower poverty rates.**
- **Protection of the Environment:** Higher rates of economic growth allows more resources to be allocated to protect environment.

Negative

- **Leading to declining industries and structural unemployment:** Economic growth often leads to great technological change and structural changes in production.

- **Loss of self-esteem:** Increases burden on the government, increases welfare payments
- Price Stability:
 - **Demand Pull Inflation:** As economic growth increases, aggregate demand increase, leading to an increase in demand for goods and services. Because firms are dynamically inefficient and have inelastic supply accordingly they may not be able to increase supply in the short term. Thus, increasing inflation.
 - **Cost-Push Inflation:** Excess economic growth may lead to scarcity in resources available which pushes up prices of factors of production. Hence, leading to inflation.
- External Stability
 - **Worsens the CAD:** Increased economic growth implies an increase in AD, hence increase in consumption. Australian households generally spend a higher proportion of their income on imported goods. Hence, worsening the BOGS, leading to balance of payment difficulties.
 - **Higher borrowings lead to higher foreign debt.**
- Distribution of Income
 - **Widens the gap between rich and poor.**
 - **Growth is uneven skewed towards skilled workers.**
 - **Social costs of inequality.**
- Environmental Sustainability
 - **Increased consumption leads to depletion of non-renewable resources.**
 - **Damage to the natural environment:** Pursuit for high economic growth will pollute the natural ecosystem and damage the environment through deforestation and land degradation.

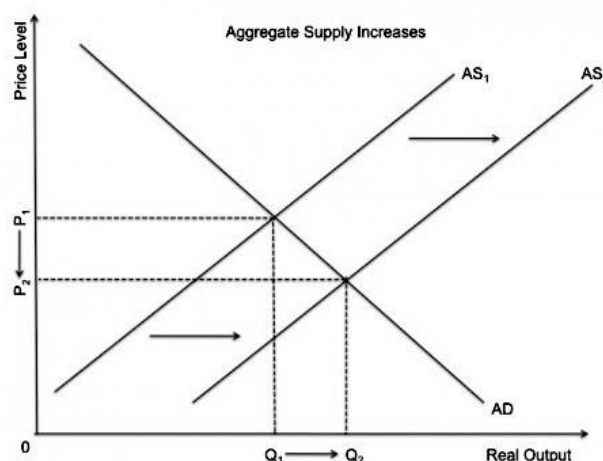
Increases in aggregate supply – improvements in efficiency and technology

- Shifts in aggregate demand plays a main role in determining the level of economic growth in the short term, while the long run rate of economic growth is heavily influenced by an economy's quantity and quality of resources needed to sustain economic growth. (Factors of production – capital, labour, entrepreneur, and land)
- **Aggregate Supply** – Represents the total volume of an economy's output

Economic Growth without inflationary pressures

Increase in AS:

- Results from higher productivity and efficiency due to education and training.
- Shows that there are more resources from immigration for skilled labour and investment in projects.



Trends in the business cycle

- **Trough** – Where output and employment ‘bottom out’ to their lowest levels. Income is at its lowest level and unemployment is at its highest.
 - e.g. 1990-91 recession in Australia was characterised by negative economic growth of -0.2% in real GDP and the unemployment rate rose to 11% of the total workforce.
- **Recession** – Defined as 2 consecutive quarters of negative economic growth.
 - e.g. The Australian economy recorded below average growth of 1.3% in 2008-09 due to the GFC but luckily didn’t enter a recession.
- **Upswing** – Characterised by an expansion of the economy’s level of output and employment.
- **Downswing** – Characterised by falling output and increasing unemployment, as aggregate demand is insufficient to generate full employment.
- **Boom** – Or peak of the business cycle where the economy has growth in income, employment and output are at maximum.

Trends in Australia:

1990 - 2000	<ul style="list-style-type: none">• Post 1990 recession, economic growth averaged between 3 – 3.7% driven by productivity growth.
2000 - 2008	<ul style="list-style-type: none">• Resource boom, economic growth averaged between 3-4%.
2008 - 2009	<ul style="list-style-type: none">• GFC growth at 1%, still better than most advanced countries.
2010 – 2012	<ul style="list-style-type: none">• Renewed resource boom, growth 3%.
2013 – 2014	<ul style="list-style-type: none">• Period of global uncertainty, slow global recovery driven by US.

2015 - Current	<ul style="list-style-type: none">• Averaging to around 2%.
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- Since 1991, Australia has mostly benefited from global economic trends, but has also gained from largely successful management of economic growth:
- Global economic conditions have been generally favourable for Australia since the early 1990s. This include the growth of global demand for resources such as iron and coal (which Australia has comparative advantage in).
- Australia has gone through a period of very large fluctuations in its TOT enjoying the double benefit of rising export prices and volumes for several years. This lifted national income and the rate of economic growth, assisting the mining investment boom.

Policies that help sustain Economic Growth

Expansionary Fiscal Policy

- Government spending > Taxation, increasing injections and decreasing leakages.
- Decreased tax = more disposable income for individuals. Hence, consumption will increase, which further boosts AD.
 - **E.g.** In 2009, the Australian government used discretionary fiscal policy to introduce stimulus measures to support AD, employment & growth in real GDP, including short-term cash transfers to low – middle income households and increasing spending on infrastructure projects. This successfully boosted real GDP by 2.75%.
- Macroeconomic management in Australia has been generally successful in maintaining a sustainable rate of economic growth that does not push inflation above target or the CAD so high that financial markets react negatively.
- Large increases in asset prices increased the wealth of households, encouraging greater borrowing and consumption (the wealth effect).

Expansionary Monetary Policy

- Lowering cash rate to easy monetary policy. This means firms and households pay less on existing funds which encourages borrowing.
 - **E.g.** Between November 2011 and August 2016, the RBA lowered the cash rate from 4.75% to 1.5% to increase borrowing and consumption. This limited the rise in unemployment and puts downward pressure on the exchange rate which also increases the international competitiveness of Australian exports. This decreases savings and increases consumption, leading to an increase in both AD/As and hence economic growth.
- The RBA's pre-emptive use of monetary policy and its focus on maintaining low inflation has been important to sustaining economic activity.
- The Australian economy has not undergone a recession since 1991, maintaining a stable growth between 2-3% with a slight drop in 2009 as a result of the GFC.

However, Australia's financial system was better regulated and not significantly exposed to the high risk financial products that triggered the GFC and the large-scale stimulus had an immediate impact on household consumption thereby preventing a recession.

- In order for Australia to achieve the highest possible rate of economic growth we need to overcome our economic challenges of the three P's (productivity, participation and population).

Unemployment

Unemployment refers to a situation where individuals are actively seeking to work but are unable to. As a result, labour resources are not utilised. **Unemployed** refers to a person who is aged 15 or over and are currently not working but is actively seeking work.

Working Age population refers to those aged between 15 to 64 of the population.

Employed: Refers to those who are over the age of 15 and currently employed or self-employed for at least 1 hr per week paid. This includes casual, full-time (35+hrs), and part-time (1-34hrs).

Measurement

Problems with current labour force statistics:

- Official statistics does not take into account the number of hours people work. Underemployment occurs when people working less than 35hrs wish to work more hours. **The underemployment rate as of May 2017 was 8.8%, which was a great increase from 2.6% in 1978.**
- Official statistics do not include 'hidden unemployment' who are discouraged job seekers.

Labour force

Labour force = Employed persons (full time and part time) + Unemployed persons

Participation rate

$$\text{Labour force participation rate (\%)} = \frac{\text{Labour force}}{\text{Working age population}} \times \frac{100}{1}$$

Australia's Labour Force Participation Rate of March 2018 was 65.5%

Unemployment rate

$$\text{Unemployment rate (\%)} = \frac{\text{Number of persons unemployed}}{\text{Labour force}} \times \frac{100}{1}$$

Australia's Unemployment Rate as of 5.6 April 2018

Trends

1992	After Global Recession (1990), unemployment rate peaked at 11%.
2007-08	Unemployment had fallen to a historic low of 4.2%, lowest over the past 30 yrs.
2008-09	With high economic growth prior to the GFC, the economy was experiencing high housing prices and cash rate. Unemployment anticipated to 8.5%, however only reached 5.8% due to the GFC.
2010-12	Economic recovery from renewed resource boom & strong trade links with China lowered UE to 1.3%.
2014-15	Unemployment increased to 6.1% due to lower growth as the mining boom ended.
2016-17	Unemployment stabilises between 5.6% - 5.8%.
2018	Currently at 5.5%.

Types and Causes

- *Cyclical*
- *Structural*
- *Frictional*
- *Seasonal*
- *Underemployment*
- *Hidden*
- *Long Term*

Cyclical Unemployment – Caused by insufficient economic activity, which reduces the demand for labour. Also known as involuntary unemployment as workers are laid off due to contractions in economic activity or aggregate demand.

Okun's Law: States that to reduce unemployment, the annual rate of economic growth MUST exceed the sum of the rate of productivity growth and labour force increases.

Structural Unemployment – Results from a mismatch of labour skills with the job vacancies offered, caused by structural changes in the economy.

- Caused by structural changes e.g. Manufacturing industries substitute labour with capital (when cost of labour exceeds cost of capital).
- Technical innovation can also create structural unemployment because the introduction of new technology makes jobs outdated (sunset industries), whilst new jobs may be created (sunrise industries) such as mining and health services. However, it takes time for workers to acquire new skills.

Frictional Unemployment – Caused by people moving between jobs, or experiencing changes in economic circumstances.

- Includes things like – People leaving one job to search for better paid career, school leavers looking for their first job, woman re-entering the workforce.

Seasonal Unemployment – Caused by the seasonal nature of some jobs, which leads to temporary unemployment.

- Examples include: tourism, fruit-picking, ski resorts.
- To remove 'sudden' swings in unemployment due to seasonal/frictional unemployment, the rate is often 'seasonally adjusted'.

Underemployment – Refers to people who are working in a part-time/casual job but would prefer to work more hours (not working to full potential).

- Not counted in the ABS statistics.

Hidden Unemployment – Refers to those people that are not officially counted in the statistics as they are not actively looking for a job because they have either given up looking for work or receive income support from spouse and are not eligible for Job Search Allowance.

- Higher hidden unemployment means lower labour force participation rate.
- **Long-Term Unemployment** – Refers to people who are unemployed for over 12 months due to lack of skills, training, educational qualifications, or the motivation to secure suitable employment opportunities in the labour market.

Off Syllabus:

Hardcore Unemployment – Refers to people who experience chronic periods of long-term unemployment due to personal difficulties.

- Examples include: Physical, mental, or emotional disability, anti-social behaviour, drug-use, criminal records, poor physical appearance, attitude issues.

Regional Unemployment – A form of structural unemployment, associated with the decline of certain industries such as steel production that are heavily concentrated in particular regions of the country.

Youth Unemployment – Refers to unemployed youth (under 25).

- Australia's youth unemployment as of 2017 is 12%.
- This has additional consequence such as lost opportunity to build human capital, don't gain experience and could lead to long-term unemployment and loss of self-esteem.

Non-accelerating inflation rate of unemployment (NAIRU)

The Non-accelerating inflation rate of unemployment (NAIRU): Refers to the level of unemployment at which there is no cyclical unemployment. (i.e. where the economy is operating at full employment).

*Note: Australia's natural rate of unemployment is estimated to be **5-6%**.

*NAIRU = Frictional Unemployment + Structural Unemployment.

Full Employment – Refers to a situation where it is no longer possible to achieve a sustained reduction in unemployment through higher growth because the unemployment rate is at the natural rate of unemployment (NAIRU).

Diagram below illustrates the concept of NAIRU:



Hysteresis/Ratchet Effect:

- NAIRU can be consistently increased via this effect, due to the growing pool of long term unemployed people.
- Long-term unemployed people suffer from a decrease in labour market skills, loss of self-esteem which makes it more difficult to find a job. Those unable to find a job will be added to the long-term unemployment pool. Hence, when the economy experiences a recession these people will be added to the unemployment pool through the Ratchet effect.
- Ratchet effect will lead to Hysteresis, whereby the growing incidence of long-term unemployment leads to an increase in the natural rate of unemployment. This occurs when people are no longer cyclically unemployed.

Main Groups affected by unemployment

Youth

- Employers seek workers with greater skills and experience, which younger workers lack.
- Youth unemployment is high because more students are choosing to study, therefore 15-19yr old are experiencing high levels of unemployment.

Indigenous Australians

- Persistently high unemployment rates may be an indication for the existence of discrimination and unequal employment opportunities in the labour force.

Recent Immigrants/Foreigners

- Experience high unemployment due to language barriers.

Regional

- There is variation in unemployment between states and within states, according to different suburbs and region. Unemployment in capital cities is approx. 5.7% compare to non-metropolitan areas of 6.4%.

Age

- Older workers have great difficulty finding a job and could eventually become discouraged to seek work – the average length of unemployment for a job seeker over 55 years old is 59 weeks compare to 20 weeks for 15-19 youth.
- *Effects of unemployment – economic and social costs*

Economic Cost:

Opportunity Cost

- Unemployment means that the economy's resources are not been used to full capacity (operating below its PPF). Total output is below what it could potentially be, meaning lower household income and expenditure, which lowers aggregate demand and ultimately economic growth.

Lower Living Standards

- Unemployed people often rely on income support provided by the government. This means employed people shoulder greater costs (tax), reducing disposable incomes therefore lowering standards of living in the long run.
- Lowers production of both capital and consumer goods which may therefore lower economic growth

Decline in labour market skills for the unemployed

- Long-term unemployed people, who have spent extended periods not performing their occupational skills will generally experience a decrease in these skills. As these skills deteriorate, people lose their labour market skills, self-esteem and experience, and will become less employable.
 - **Hysteresis (Ratchet Effect)** – This process will cause short-term or cyclical unemployed people to become long-term unemployed.

Cost to the government

- Less tax revenue collected and more government expenditure to support the unemployed.

Lower Wage Growth

- High levels of unemployment mean that there is an excess supply of labour in the economy, which should lead to a fall in the equilibrium level of wages in the labour market. This will lead to slower wage growth.

Social Costs:

Increase Inequality

- Unemployment tends to be more frequent among lower income earners in the economy, such as the young and unskilled. Because unemployment means a loss of income, they become relatively worse off compared to higher income earners, which widens the income gap and contributes to poverty and overall inequality in income distribution.

Loss of self-esteem

- Unemployment reduces the motivation to seek jobs or undertake further education/training.
- Low self-esteem could lead to increased crime, mental illness -> suicide etc.
- Poor health.

Other miscellaneous social costs

- Family tensions.
- Financial hardship and poverty.
- Increased debt -> credit card/house mortgage.
- Boredom.

Inflation

Inflation refers to a sustained increase in the general price level overtime. It is an economic problem as inflation delivers a fall in the purchasing power of money (decline in real value of money) in terms of the amount of goods and services it can buy.

$$\text{Inflation Rate: } \frac{\text{Current CPI} - \text{Prior CPI}}{\text{Prior CPI}} \times 100$$

Measurement – headline and underlying

Headline Inflation – Includes all prices changes in the CPI basket.

- Most widely quoted price index is CPI.
- **Consumer Price Index (CPI)**: A weighted index number used to convert the price movements of a wide range of common metropolitan household spending into a measure of inflation.

- Each regimen in the CPI is weighted according to order of importance in average household expenditure and the rate of change in all groups is used to construct the CPI.
- Headline as a method of measuring inflation is somewhat inaccurate as it includes one-off or volatile price changes that DO NOT accurately show the rise in general price.

Other reasons why CPI is inaccurate:

- Regular concerns about the basket content (CPI has 11 categories).
- Calculated quarterly while the RBA meets monthly.
- Excludes factors of production and raw materials.
- Lagging indicator of change in spending patterns.

Underlying (Core) Inflation

- A calculation of inflation that removes 'one-off', seasonal, and volatile factors (i.e. High food prices due to drought, floods, cyclones, oil prices etc).
- Tends to be less variable than headline inflation.
- It is a better indicator of long term trends because quarterly CPI statistics can be volatile if distortions are caused by large price movements in one or two groups/categories of expenditure. (e.g. Queensland drought causing significant increase in price of bananas).

Trends

1970 – 1980	<ul style="list-style-type: none"> • By the end of the 1980s, Australia had experienced a period of 2 decades during which the rate of CPI inflation averaged around 9%. • Inflation has been steadily decreasing since 1982 where the recession caused inflation to peak at 21%. • The decrease since has been due to RBA's aim to keep inflation between 2-3% by managing cash rate.
1990 – 2000	<ul style="list-style-type: none"> • 1993 the RBA began to target an inflation rate averaging 2-3% over the course of the economic cycle in order to determine interest rate decisions. • RBA increases the cash rate if inflation was greater than 3%. • RBA decreases the cash rate if inflation was below 2%.
2000 – 2008	<ul style="list-style-type: none"> • Underlying inflation peaked at 4% between 2005 and 2008 due to a combination of high global prices, strong domestic growth and an increase in wage pressures which led to demand-pull inflation with the CPI rising by 4.5% and underlying inflation by 4.3% pre GFC.
2008 – 2009	<ul style="list-style-type: none"> • During the GFC, reducing consumer demand has led to a fall of inflation to 1.2%.

	<ul style="list-style-type: none"> After the GFC, inflation slowed to 1% which was far more stable than most advanced countries. Economic recovery in 2009, followed by a strong exchange rate reduced import prices also contained inflation.
2010 – 2012	<ul style="list-style-type: none"> Renewed resource boom 2011 renewed inflationary pressures. Global economic growth as well as the impact of floods and Cyclone Yasi led to higher fruit & vegetable prices which lifted the CPI inflation rate to 3.6% and the underlying inflation rising to 2.7%.
2013 – 2017	<ul style="list-style-type: none"> As of September 2017, the annual CPI sits at approx. 1.8%. Between 2013 – 2017, slower economic growth, a lower exchange rate and cuts in official interest rates. Lower CPI inflation was also driven by lower world oil prices which flowed through to lower petrol and fuel prices in the Australian economy. Price inflation for volatile items (i.e. Fuel, fruit) also remained relatively low. Cost pressures were also low with a historic low growth in wages of 1.9%. Increase in electricity, gas prices, tobacco excise and building/construction costs associated with the boom in apartment construction and rise in housing prices. As a result, CPI inflation fell to 1.9% and underlying inflation to 1.5-1.8% in the June quarter of 2017.
Current 2018	<ul style="list-style-type: none"> Consumer prices in Australia rose to 1.9% during the December quarter of 2017. Housing and transport costs are increasing faster than cost of necessities (e.g. food).

Causes: Demand inflation

Demand-Pull inflation: Occurs when aggregate demand rises faster than aggregate supply.

- When $AD > AS$ (productive capacity), the demand for goods and services will also increase. Hence, price rises as output cannot expand further in the short term.
- Consumers also force prices up by bidding against each other for limited goods and services available.
- As AD increases to AD1, consumers are willing to pay a higher price for any given level of supply price and therefore increases price from P1 to P2.

Cost inflation

Cost Push Inflation: Caused by increases in the cost of production for firms.

- Essentially the costs are 'pushed' to consumers.

- Results from a decrease in aggregate supply and may be caused by a rise in wage rates or a rise in the cost of raw materials (e.g. Higher oil and energy prices) which causes firms to increase the price of final goods and services.
- In order to maintain profit margins, firms will pass the increase in cost of production to consumers by raising the price of the good or service.
- Aggregate supply shifts to the left, producers face higher cost and now supply less quantity for any given price level. This will cause a new equilibrium to be established at a higher price level of P2 and a lower output level at GDP2. The economy will experience a contraction in real GDP and a rise in inflation and consequently unemployment -> **Stagflation** – A condition where there is high inflation & unemployment.

Import inflation

Imported Inflation: Caused by increases in the prices of tradable products imported to Australia.

- If AUD depreciates, the domestic price of imports will increase leading to increased inflation in Australia.
- If inflation rises in the overseas sector, the price of imports will rise and hence inflation in Australia will also increase.
- 40% of intermediate goods (inputs into production such as raw materials) are imports, if the prices of imports increase the cost of production will increase thus leading to Cost-push inflation.

Inflationary expectations

Inflationary Pressures: Individuals in the economy expect higher inflation in the future, they may act in a way that causes an increase in inflation.

- If households/firms expect prices to rise in the future, they will attempt to increase spending now to maximise value of their money. This high demand will lead to Demand-pull inflation.
- If workers expect inflation, they will negotiate wage increases to preserve the purchasing power of their wage. This increases cost for firms and ultimately lead to cost-push inflation. Currently, the Australian minimum wage sits at **\$18.29** per hour 2018.

Other Causes of inflation:

Government Policies: Policies such as increases in indirect tax, deregulation, tariff reforms, and increased charges for goods and services provided by the Australian government will increase inflation.

- An increase in indirect tax (GST) will increase the price of goods and services, leading to inflation.
- Deregulating an industry could allow firms to increase the prices they charge for their products and hence increasing inflation.

- Tariff reforms could increase business cost leading to cost-push inflation.
- Example: In 2000, the introduction of GST by 10% was the reason for the spike in the CPI to 6%. The introduction of carbon tax was expected to increase the price of affected goods from July 2012, adding 0.75% to the inflation figure.

Quantitative Easing: Introducing new money (Printing money) into the economy by the central bank.

- Zimbabwe's output fell by 93% in the manufacturing sector, while simultaneously increasing the supply of cash, which worsened the economy due to rapidly increasing prices of goods and services. The peak month of hyperinflation occurred in mid-November 2008 with a rate estimated at 79,600,000,000 % per month, leading to the abandonment of the currency.

Hyperinflation – Occurs when a country experiences very high and usually accelerating inflation.

Positive and negative effects

Positive Effects:

Real Interest Rates (* For individuals and Businesses)	<ul style="list-style-type: none"> • Inflation helps borrowers with loans at fixed interest rates. As inflation rises real interest rates fall, so people with fixed rate loans pay effectively less interest.
Asset Prices	<ul style="list-style-type: none"> • Assets such as shares, and real estate may grow in value with inflation, known as the <u>increasing wealth effect</u>. If there is a speculative boom in the market, driven by excessive confidence and supply can lead to <u>asset price inflation</u>. • Asset price inflation can lead to a distortion in resource allocation such as the growth in borrowings by investors to purchase real estate in 2014-15 in the booming Sydney market.
Reduce Likelihood of deflation	<ul style="list-style-type: none"> • Inflation reduces the likelihood of the economy experiencing deflation. Deflation can have negative impacts as consumers see prices falling and decide to delay expenditure as they weigh for future price drops. This leads to reduction in consumer spending which leads to a decline in aggregate demand and could spark an economic downturn. • Deflation also makes borrowing money less attractive as the amount to be repaid is rising in real terms.

Negative Effects:

Household	Loss of Real Wages <ul style="list-style-type: none">High inflation will erode purchasing power, unless consumer income keeps pace with inflation the cost of living will continue to increase.
	Impact of consumption and savings (* Real Interest Rate = Nominal – Inflation) <ul style="list-style-type: none">Household expenditure as a proportion of income must rise if prices rises, hence higher consumption and less savings.
	Redistribution of Income <ul style="list-style-type: none">Rich people benefit from inflation (e.g. Value of assets increase).Inflation heavily impacts consumers that only earn from wages, income shifts away from wage earners to those who earn dividends & profits.

Firms	Increased Production Costs <ul style="list-style-type: none">Costs may be passed on to consumers in the form of higher prices, but some must be absorbed by the form of reducing profit margins depending on the price elasticity of demand. <p>E.g. If cigarettes are taxed, these taxes will be passed on to consumers in the form of higher prices. But it won't affect the quantity of smoking much. Inelastic demand leads to a lower cost but higher inflation.</p>
	Loss of International Competitiveness (*PQRS) <ul style="list-style-type: none">Overseas firms may face higher prices, impacting exports & import-competing firms. Thus, export falls, lowering revenue and aggregate demand.
	Loss of profitability and market share <ul style="list-style-type: none">Inflation may discourage investment as they become less profitable and limit long-term ability for firms to increase productive capacity.

Government	<p>Weaker Fiscal Position (*Deficit or Surplus)</p> <ul style="list-style-type: none"> Welfare payments will rise, government spending will increase, leading to a budget deficit. Will simultaneously increase spending on infrastructure projects. Wage rising increases government revenue but consumer's disposable income falls (Bracket Creeping).
Economic Growth	<ul style="list-style-type: none"> High inflation leads high nominal interest rates which increases the cost of borrowing. This constrains economic growth as individuals and businesses are less inclined to invest. Inflation damages external stability through the loss of international competitiveness and worsening the CAD.

Policies to Sustain low inflation:

Macroeconomic

- Contractionary Monetary Policy – RBA increasing the cash rate, leading to an increase in interest rates and the cost of borrowing leading to reduced consumption and higher savings. Therefore, lowers AD and inflation.
- Contractionary Fiscal Policy – Involves an increase in the structural surplus or reduction in the deficit of the budget outcome through lowering government spending or increasing taxation.

Microeconomic

- Australian Competition and Consumer Commission (ACC) – Enforce the Competition and Consumer Act 2010 and a range of additional legislation, promotion competition, fair trading and regulating national infrastructure for the benefit of all Australians.
- Tariff Reforms to increase competition from imports in domestic markets. (*Australia import a lot of intermediate goods which are part of production cost) A reduction in cost-push inflation, leading to a reduction in imported inflation and hence a reduction in overall inflation.
- Principle of workplace or productivity bargaining (1991) to decrease cost-push inflation.
- Taxation Reform to remove indirect taxes (e.g. GST) such as sales tax which distorted prices and raised cost structure for firms → Increasing tax threshold changing tax bracket.

External Stability

External Stability – Achieved when export income is sufficient to finance import expenditure, the servicing costs of Australia's foreign liabilities are met, and the exchange rate is relatively stable over time.

Measurement

Current Account Deficit (CAD) as a percentage of Gross Domestic Product.

$$\text{Current Account Deficit to GDP} = \frac{\text{CAD}}{\text{GDP}} \times 100$$

- This ratio shows how sustainable the CAD is over time, generally try to keep the same or GDP higher.
- CAD first emerged as a concern in the 1980s averaging around -4.5% and economic growth p.a. averaged 3%. If CAD exceeds economic growth then it is considered unsustainable.
- Australia's CAD is mainly driven by low national savings that led to high servicing costs and dividend payments through the net primary income account.
- High CAD could lead to debt trap scenario whereby more money is borrowed to finance CAD and interest payments on the money borrowed worsens the CAD. (e.g. Greece).

Pitchford Thesis: States that as long as the CAD is a result of savings and investment decisions by the private sector which are not distortions to normal market mechanisms, then it is not a concern to an economy's external stability.

- However, the problem with the Pitchford Thesis is the fact that private sector does not always calculate the risk of borrowing overseas (e.g. Cannot predict external shocks, inevitable risk of appreciation/depreciation).

Net Foreign Debt as a percentage of Gross Domestic Product

$$\text{Net Foreign Debt to GDP} = \frac{\text{Net Foreign Debt}}{\text{GDP}} \times 100$$

- **Net foreign debt = Foreign debt assets – Foreign debt liabilities.**
- Foreign debt assets (Australian debt lending overseas), Foreign debt liabilities (Overseas debt lending to Australia).
- It is a measure of total debt to total output of GDP.
- In 2016-17 the net foreign debt of \$990,559m represented 58.9% of GDP.
- High Foreign Debt has several consequences to an economy:
 - Falling credit ratings because lenders have a greater risk, Australia's current AAA credit rating indicates a low risk.

- High debt implies high servicing costs which is recorded as debits on the net primary income account which will contribute to a larger CAD.
- High debt increases the vulnerability of an economy to deteriorating world economic conditions.

Net Foreign Liabilities as percentage of Gross Domestic Product

$$\text{Net foreign Liability to GDP ratio} = \frac{\text{NFL (Debt + Equity)}}{\text{GDP}} \times 100$$

- **Net foreign liabilities = Net foreign debt + Net foreign equity.**
- Successive CAD must be financed through debt or equity borrowings.
- In 2011-12 Net foreign liabilities reached a high of 60.8% of GDP.
- In 2016-17 net foreign liabilities of \$1,000,264 represented 59.5% of GDP.
- It is an indication of Australia's total debt and equity servicing costs of accumulated CAD.

Terms of Trade

Terms of Trade measures the relative price of the country's export price index over its imported price index.

- A favourable movement in the TOT occurs when export prices are rising faster than import prices. This means a greater volume of imports can be financed with a given volume of exports.
- Australia has experienced a sustained increase in TOT due to higher prices of mineral exports.
- However rising TOT will lead to the **Dutch Disease** causing the AUD to appreciate and other sectors of the economy will suffer from loss of international competitiveness, making it more volatile to fluctuations in the global economy in the long term.

$$TOT = \frac{\text{Export Price Index}}{\text{Import Price Index}} \times 100$$

Exchange Rate

Exchange Rate – Refers to the value of one currency to another.

- Volatility or heavy fluctuations in the AUD could threaten the economy's external stability.
- The exchange rate averaged \$0.71 USD over the past 3 decades. It peaked at \$1.10 USD in 2011 due to the mining boom but has been falling since then.
- An appreciation in the AUD will lead to the Dutch Disease because not all sectors benefit from increased export revenue.

International Competitiveness

- Australia's lack of international competitiveness implies a BOGS deficit which constrains economic growth and leads to a higher CAD.

Trends

- CAD in the past 40 years.
- Net primary income account deficit of approx. 2.5% to 4.5% of GDP. This suggests long-term problems in exports and international competitiveness such as capacity constraints and higher wages (Could lead to cost-push inflation).
- Rapid growth in Net foreign liabilities in 1980s because of an increase in foreign investment into Australia due to deregulation.
- Net foreign debt as a percentage of GDP has grown since late 1990s.
- Between 1982-93, foreign debt rose significantly as the private sector borrowed heavily to finance investment both in Australia and offshore.
- Net foreign debt in the 2000s rose to 50% of GDP despite widespread attempts to reduce debt in the private sector.

Positive and negative causes and effects

Causes of CAD and Foreign Debt:

Current Account Deficit

Net Primary Income account:

- Foreign investment has added to the burden of interest/dividend payments
- Domestic business cycle
- Domestic and global interest rates
- Accumulated debt
- Savings and investment gap

Balance of Goods and Services:

- Narrow export base
- Capacity constraints
- Net importer of capital
- Lack of international competitiveness -> Inability to compete with nations in Asia
- Agricultural exports struggle due to high US/EU protection and environment problems
- Australia import spending has risen due to globalisation and economic growth

Exchange Rates

- Commodity prices
- Demand for exports/imports
- Currency speculation
- Investment opportunities

Net Foreign Debt	
Globalisation (Economic Integration): <ul style="list-style-type: none"> Increased foreign investment due to deregulation, raising the size of the net income deficit through higher interest rates overseas. Increased access to cheap offshore credit. Increased imports of cheap manufactured goods. Increased currency speculation. 	Mining Boom: <ul style="list-style-type: none"> Main driver of domestic economic growth and attracted large volumes of foreign investments (increases CAD). Post mining boom, large volumes of capital inflows has allowed everything to be built, firms are no longer spending; only revenue coming in thus they are able to repay loans.
Savings and Investment Gap: <ul style="list-style-type: none"> Large gap between level of household savings and amount of investment necessary to develop & expand the Australian economy. The population is too small to fund billions necessary for infrastructure development, agriculture expansion etc. Lower domestic savings mean that firms look overseas to fund investment and borrowings, increases the size of net foreign debt. <p>Paradox of Thrift – States that if everyone tries to save more money to increase wealth, the aggregate demand will fall and in turn lower total savings in the population because of the depreciation in consumption incomes and economic growth.</p>	Depreciation: <ul style="list-style-type: none"> In the <u>short run</u> the CAD worsens a previously signed contracts on trade cannot change the volume of exports. Firms are still buying the same quantity because there is a lag effect. In the <u>long run</u> it is positive as consumers purchase less quantities of expensive imports and exporter will be able to sell more thus improving the CAD. Payments for overseas lenders cost more AUD to repay, which increases the size of net foreign debt.

Positive Effects	Negative Effects
Pitchford Thesis <ul style="list-style-type: none"> Overseas liabilities are acceptable if they are used to fund investment into industries that increases the productive capacity necessary for the economy to expand. 	AUD Depreciation <ul style="list-style-type: none"> If a depreciation occurs due to a higher CAD, there is a valuation effect on that part of the net foreign debt denominated in foreign currencies, with more Australian dollar having to be paid back to foreign lenders.

<p>Others:</p> <ul style="list-style-type: none"> • Borrowings from overseas allows businesses to fund investments and growth of different industries which creates employment and development within the economy. • With a small population, foreign sources of investment are important because local source of capital is limited due to low national savings. It is beneficial as long as the investment is higher than the cost of borrowing. 	<ul style="list-style-type: none"> • Can lead to higher domestic inflation. <p>Increased Foreign Ownership</p> <ul style="list-style-type: none"> • Persistent CAD which are financed through foreign debt and equity borrowings increases the servicing cost in the future leading to a larger NPI deficit. • Risk of debt trap scenario. <p>Credit Rating Downgrades</p> <ul style="list-style-type: none"> • Exposure to high levels of foreign debt liabilities could decrease Australia's AAA credit rating by international credit rating agencies (S&P, Fitch, Moody's) making future borrowings more difficult. <p>Higher Servicing Costs</p> <ul style="list-style-type: none"> • With a lower credit rating, investors will demand a 'risk premium' hence making it more expensive to borrow funds. <p>Financial Contagion</p> <ul style="list-style-type: none"> • A persistent CAD and large foreign debt may increase the exposure to external shocks such as TOT collapses, which may reduce export income and increase the servicing cost. • Increases the possibility of capital outflows if investors lose confidence in the Australian economy and the government's ability to manage CAD.
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Government Policies on External Stability

Macroeconomic focus in recent years has been on reducing the CAD through lowering government component of foreign debt to stabilise the value of the AUD.

Fiscal Consolidation: Long run budget surplus & budget deficit should even out.

Microeconomic policies include assisting with structural change in exporting industries (e.g. Improve mining/agriculture sector) where Australia has international competitiveness in.

Distribution of income and wealth

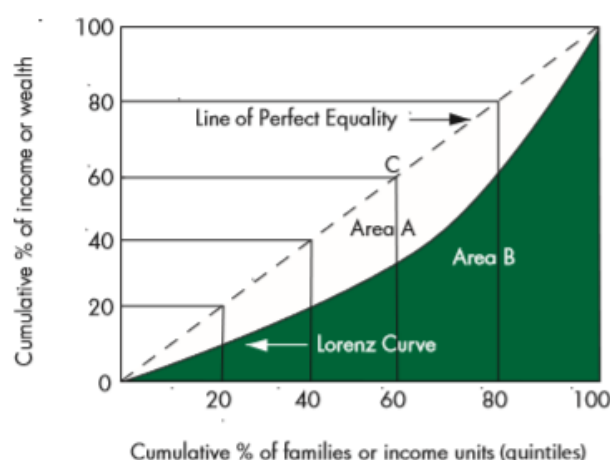
Measurement – Lorenz curve and Gini coefficient

Lorenz Curve – A graphical representation of the proportion of national income earned (or total) of a given percentage of population.

Gini Coefficient – Refers to a number between one and zero that measures the extent of income inequality in an economy. It is calculated by measuring the degree to which the Lorenz curve deviates from the line of equality.

$$\text{Gini Coefficient} = \frac{A}{A + B}$$

Figure 11.1: The Lorenz Curve



Sources of income as a percentage of household income

Income (A flow concept) – The flow of funds or money from market and non-market sources over a period of time.

Personal Income:

- Return for factors of production (i.e. Land, labour, capital, and enterprise) or as government transfer payments (e.g. pensions, job search allowance, welfare payments).
- Earned (**Primary**) Income: Wages from contribution of labour.
- Unearned (**Secondary**) Income: Rent from the use of land, interest on capital, and profit from business enterprise.

Reasons for difference in income & wealth:

- **TIPS** (Technology, Income per Person, Productivity, Savings)
- **DDDDDifferences** (Demographics, debts, demand pull inflation, dualism, demonstration effect)

Taxation, transfer payments and other assistance

The Australian government's welfare payment is based on the redistribution of income from high income earners to low income earners through the system of progressive taxation.

Progressive Tax – Use of varying tax rates for tax incomes whereby higher income earners pay progressively more tax than low income earners. This is achieved by dividing income into tax brackets.

Proportional Tax – Fixed single tax rate applied to taxable income (e.g. Corporate Tax Rates of 30% for companies over \$10m, 27.5% tax for companies under \$10m).

Regressive Tax – Low income earners pay a higher percentage of their income tax than high income earners. (e.g. GST regressive taxes increase inequality).

- Approximately 35% of revenue raised by the government is spent on transfer payments such as pension, allowances, tax benefits or expenditures.
- Shifting large sum of money from high income to low income earners through progressive tax is not a sustainable way to lower income inequality over the long run.
- Ensuring equal access to high quality services for all population (i.e. Education, public health care, professional development programs) is likely to earn high income and reduce inequality.

Sources of wealth

Wealth (A Stock Concept) – The value of real and financial assets owned by an individual at a particular point in time. Wealth can be measured by reference to the type of asset presenting the stock. (i.e. Property, cash, share etc).

- **Personal Wealth** – Refers to the net value of real and financial assets owned by individuals in particular point in time.
- **Real Assets** – Property and possessions.
- **Financial Assets** – Shares, bonds, cash.
- In Australia, the distribution of income and wealth is more equitable than the distribution of income.
- High income earners have more opportunity to borrow and increase asset accumulation.
- There is a **STRONG CORRELATION** between income and wealth, low-income earners often have little wealth and high-income earners can generate increasing levels of wealth.
- High-income earners have a higher saving ratio which allows them to accumulate assets -> Leads to unearned income (e.g. Rent, profit, interest, dividends)

Dimensions and trends, according to gender, age, occupation, ethnic background, and family structure

Trends:

Table 11.3: Percentage Income Shares for Income Quintiles, Australia - 2007 to 2014					
	2007-08	2009-10	2011-12	2013-14	Income pw 13-14
<i>Equiv. Disp. Income Quintile</i>					
Lowest	7.3%	7.4%	7.5%	7.5%	(\$375)
Second	12.3%	12.4%	12.6%	12.3%	(\$615)
Third	16.9%	17.0%	17.3%	16.9%	(\$843)
Fourth	22.6%	23.0%	23.0%	22.4%	(\$1,119)
Highest	41.0%	40.2%	39.5%	40.8%	(\$2,037)
All Income Units	100.0%	100.0%	100.0%	100.0%	(av. \$998)
Gini co-efficient	0.336	0.329	0.320	0.333	

Source: ABS (2015), *Household Income and Wealth, Australia, 2013-14**, Catalogue 6523.0, September.
NB: figures are rounded and do not total * The *Household Income and Wealth, Australia, 2013-14* is the latest ABS survey

Age and Education

- Highest income 25-64 (main years of a person's working life).
- Low income in early years of working life due to low experience and education, often hold lower-paying jobs.
- Wealth redistribution follows a similar pattern.
- In 2014, the average weekly income for young males and females (21-24 years old) was \$757 compared to \$1,249 for adult males and \$940 for adult females.

Gender and Occupation

- Due to past attitudes regarding the role of women in society, females have fewer opportunities to acquire education, skills, and qualification.
- On average females earn lesser than males.
- In 2015, average weekly income for males were \$1,602 compared to \$1,235.

Ethnic and Cultural Background

- Approx. 1 in 4 Australian employees are born overseas, the level of fluency in English can directly influence an individual's ability to find a job.
- Recent migrants from English speaking countries tend to have higher incomes than Australian born individuals.
- Migrants from Non-English-speaking backgrounds tends to have much lower incomes, making it harder to obtain higher paying jobs.

- Migrants from countries such as Britain, USA, New Zealand earn more than those from China, Vietnam, Iraq, and Lebanon.
- Indigenous Australians earn considerably less income than Non-Indigenous Australians.

Family Structure

- One-person households & Single parent households receive weekly income significantly below the median of \$715 per week.
- Couples without dependent children earn the highest income.
- Family Structure ranked from highest to lowest income are as follows:
 - Couples with no dependent children
 - Couples with dependent children
 - Single
 - Single Parent

Table 11.5: Selected Characteristics of Households, by Equivalised Disposable Household Income Quintiles in 2013-14

Household Characteristics	Lowest 20%	Second quintile	Third quintile	Fourth quintile	Highest 20%	Mean Weekly Income (\$)
Couple with dependent children	14.4	20.1	24.8	21.4	19.3	\$1,011
Couple without dependent children	22.9	17.2	14.0	17.9	28.0	\$1,113
One parent family	39.4	31.9	16.7	8.3	3.7	\$687
Lone person	42.0	17.0	13.4	14.3	13.3	\$807

Source: ABS (2015), *Household Income and Wealth, Australia, 2013-14*, Catalogue 6523.0, September.

Economic and social costs and benefits of inequality

Economic Benefit

‘Incentive Effect’ on workers and entrepreneurs. Employees will work harder and achieve higher wages and other rewards can be attained through higher levels of education, skills, training, and productivity -> Higher incomes may boost national savings and investment leading to greater levels of technological progress & increase in productive capacity.

More income in the economy means that entrepreneurs are willing to take risks -> more businesses may be established or expanded -> Creating more job opportunities -> More people paying tax.

- **Increase Labour Mobility** – inequality is an incentive for households to earn higher income rewards. -> A more mobile labour force generally to a more efficient allocation of resources in the economy.
- **Labour force Work Longer and Harder** - Potential higher income rewards, members of the workforce tend to work harder and longer.

- **Increased potential for higher savings and capital formation** – Higher income means higher APS; increased savings will then allow for greater capital formation (Investment & buy more equipment to expand business).

Social Benefits

- Access to lifestyle and personal opportunities.
- More leisure time for family, entertainment etc.
- Could argue that an economic environment where inequality exists will encourage hard-work, risk-taking, and social mobility and could increase productivity to some extent.

Social Costs	Economic Costs
<ul style="list-style-type: none"> • Growing inequality leads to social divisiveness and the marginalisation of some groups in society such as the unemployed, low income earners, migrants, and Indigenous Australians. • Social divisions based on differences in income. <ul style="list-style-type: none"> • Class distinction: Low, middle, and high-income earners. -> Leads to increased social tension in the community -> lower economic efficiency. • Poverty – Lower incomes have an adequate standard of living, may experience housing stress, less money spent to consumption. • Other Social Costs: <ul style="list-style-type: none"> • Boredom • Increased crime rates • Family tension <p>(*Very similar to social costs of unemployment)</p>	<ul style="list-style-type: none"> • POVERTY – An enforced lack of socially perceived necessities to achieve an adequate standard of living -> Welfare dependency rises. • Absolute Poverty – A situation where individuals do not have access to the basic requirements of life (e.g. Food, Shelter, Clothing). • Relative Poverty – Situation where individual's incomes means they are excluded from being able to take part of what is considered as acceptable standards of living in a society. <p>Poverty Trap</p> <ul style="list-style-type: none"> • Individuals on the poverty line may not benefit from getting paid work as they might be better off staying on benefits • Opportunity Cost – Lower consumptions and utility levels for lower income earners. • Increased cost of welfare support – Increased inequality suggests an increase in the number of low-income earners and relative poverty. The government need to allocate more revenue to provide welfare support. • Increase conspicuous consumption – Higher income earners will buy luxurious goods to display wealth which creates a class of high income where consumption is common.

Policies to Reduce Income and Wealth Inequality

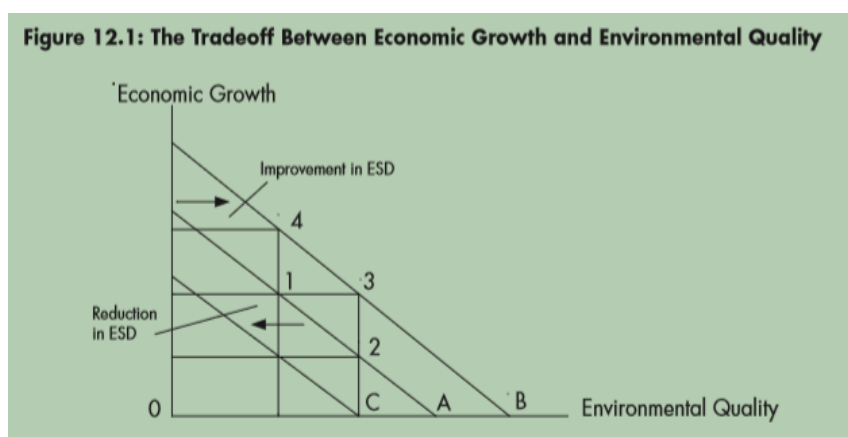
- **Enterprise Bargaining Reforms** - 'Fair Work Act' 2009, enable less skilled workers to engage in enterprise bargaining more easily to increase their wages and thus equality.
- **Minimum Wage** – By enforcing minimum wage, the incomes of workers are increase income inequality.
- **Redistribution of Taxation Revenue** – Progressive tax system.
- **Monetary Policies** – Interest rates are increased to slow economic growth, as the lower quintiles are usually borrowers, with mortgages or personal debt.

Environmental Sustainability

Ecologically sustainable development

Refers to development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Overuse of resources to achieve short-term growth can deplete resources and damage the environment thus reduced future potential output.



Private and social costs and benefits – externalities, market failure

Market Failure – Occurs when the price mechanism takes account of private benefits and cost of production to consumers and producers but falls to into account indirect costs such as damage to the environment.

- **Negative Externality** – Refers to an unintended negative outcome of an economic activity whose cost is not reflected in the operation of the price mechanism.
- Negative Externality exists when **SOCIAL COST > PRIVATE COST** meaning we should **RESTRICT USAGE**.
- When **SOCIAL COST < PRIVATE COST** we should **INCREASE USAGE/PROUCE MORE**.
 - e.g. Cost of future medical treatment caused by second hand smoke.

- **Positive Externality** – Refers to an unintended outcome of an economic activity whose cost is not reflected in the operation of the price mechanism.
 - e.g. Cost of vaccinations not borne by avoiders, who still benefit by the barrier of protection created by people who gets the vaccine
 - Use of trucks which improves the efficiency of transport and may lead to more jobs (even though it causes pollution).

Tragedy of the Commons – Refers to a situation where the failure of the market to assign costs to individuals lead to an overuse of resources such as the natural environment, which have no single owner.

Private Costs (Supply) – Costs of the producers of using resources in production, or cost of consumption.

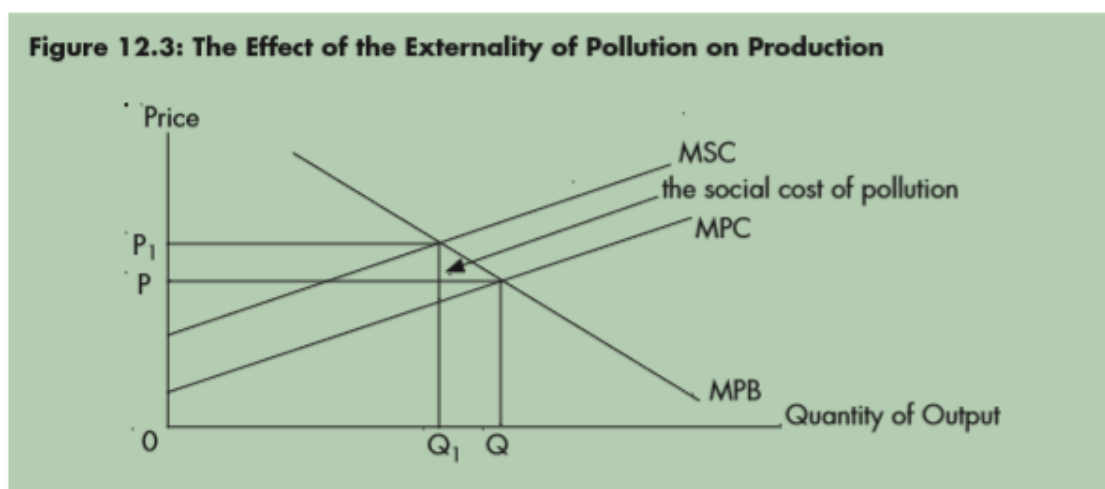
Private Benefits (Demand) – Profit to the producers and satisfaction derived by consumers from consumption.

Social Costs (Supply) – Costs suffered by society as a result of private actions such as pollution.

$$\text{Social Costs} = \text{Private Cost} + \text{Externality Cost}$$

Social Costs (Demand) – Positive spill over effects of private production on the community such as perfume.

$$\text{Social Benefit} = \text{Private Benefit} + \text{Externality}$$



Public and private goods – free riders

- **Private Goods** (Excludable and Rival)- Goods that are temporarily or permanently used up when someone consumes them. It is easy to exclude people who are unwilling to pay for benefits.
 - **Rival** – If one person consumes the good then the availability for others is diminished.
 - **Excludable** – Individuals who do not pay for good.

- e.g. Airplane rides, mobile phones etc.
- **Public Goods** (Non-excludable and Non-rival) – Refers to items that private firms are unwilling to supply as they are not available to restrict usage and benefits to those willing to pay for the goods.
 - For example: If the government introduces policies to reduce air pollution, people cannot be prevented from enjoying the benefits of clean air whether they are willing or not to pay for clean air through higher taxes or license fees to polluters.
 - e.g. National defence, police force, emergency services, flood control schemes etc.
 - **Non-Rival** – Consumption of the good by one individual does not reduce the quantity of the good available for others.
 - **Non-Excludable** – Producers cannot exclude consumers from enjoying the benefits of that good.
- **Public Sector Goods** – Refers to goods provided by the government such as parks and roads.
 - They can be but do not have to be public goods.
- **Impure Public Goods** – Private provision of a 'public' good. A good/service that is rival and excludable but not profitable to produce.
 - Their use is usually subjected to congestion as only a limited number of consumers can enjoy the commodity before consumption possibilities begin to deteriorate.
 - e.g. Private education, private health care, national parkland, toll roads.
- **Free Riders** ('Non-paying' users)– Refers to groups of individuals who benefit from a good/service without contributing to the cost of supplying that good/service.
 - The free rider problem could hinder the development of a market, or in the case of an existing market limit the supply.
 - Free riders can prevent allocative efficiency from being achieved with environmental resources.
 - e.g. Fishing company benefits from using clean ocean without paying the cost of reducing pollution.
- **Merit Good** – Provided or subsidised by the government because it is considered beneficial to the economy.
 - e.g. national libraries, Sydney Opera House (Tourism).
- **Demerit Good** – A good/service whose consumption is considered unhealthy or socially undesirable.
 - e.g. Tobacco, alcohol, gambling, drugs, junk food.

Environmental issues:

Economic Role of the Environment

1. Provides sources of raw material or environmental inputs (e.g. Air, water, land, climate, minerals etc).
2. Receptacle for both biodegradable and non-biodegradable waste products from households and firms.
3. Provides environmental amenities or renewable resource flows (e.g. Beautiful landscape, mountains, lakes, forests etc) for human activity.

Preservation of natural environments

- Human activity could be detrimental to the environment by causing irreversible changes.
- High levels of water and air pollution may restrict the availability of resources – hindering the economy's ability to grow in the long run.
- May result in loss of biodiversity – Note that Australia has a lot of unique flora/fauna which are worthy of preservation for their natural beauty, recreational value, and contribution to scientific research.

The Control of Pollution:

- Restriction of development in sensitive areas such as mining in national parks
 - Especially in landmarks e.g. The Great Barrier Reef.
 - Reef 2050 Long-Term Sustainability Plan: \$140m funding to protect Reef.
 - AUS Govt investing \$50m from 2016-20 for the 20 Million Tree Programme.
- Control over emission of waste products.
- Protecting native plants and animal species from extinction.
- Carbon Pricing – The government should put an appropriate price on carbon through taxes, carbon trading or regulation and encourage consumers to buy low carbon products.
- Implement policies to manage existing climate change by reducing greenhouse gas emission in industries and residential population.

Pollution, climate change

Pollution – Occurs when the natural environment is degraded and can affect the atmosphere, water resources and land.

Climate Change – Caused by emissions of the greenhouse gases and impacts the environment by increasing temperatures and rising sea levels.

- Upper middle-income countries must also adapt low carbon technologies. This can help to reduce greenhouse gas emission in the future.

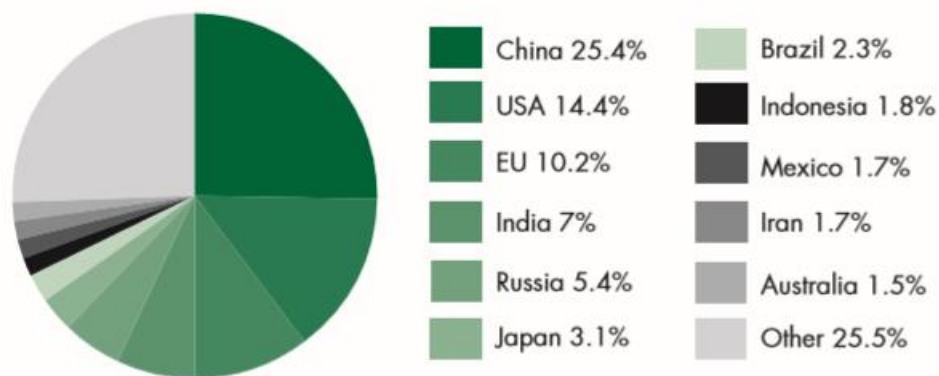
Depletion of renewable resources and non-renewable resources

Renewable Resources – Refers to resources that can be sustained despite usage and usually encompass all biological resources in the environment such as plants, trees, and animals.

Non-Renewable Resources – Include reserves of coal, crude oil, iron ore and uranium which cannot be sustained with increasing usage as their supply is finite and may be exhausted.

- The depletion of natural resources is both an economic and environmental problem.
- Managing resources is important because the economy relies on exploitation of resources (e.g. Zinc, lead, coal, iron ore etc).
- Mineral exports are responsible for over 50% of total export revenue.
- Developed economies require energy which pollutes a lot.

Figure 12.5: Largest Global Emitters by Country in 2010



Source: World Bank (2015), *World Development Indicators 2015*, World Bank, Washington DC.

Government Policies to Promote Environmental Sustainability

- Total ban on the production of a good or service.
 - Since 2002 Australia banned the selling of leaded petrol.
- Subsidies and government funding.
 - Subsidising clean energy technology that run on batteries.
 - Subsidising purchases of solar panels.
- 1997-97 Budget the government established the National Heritage Fund (NHT) to fund environmental activities for the conservation of Australia's land, water, forests etc.

- 2005 National Water Initiative to establish national water markets to improve water quality and manage water resources.
- Imposition of tax on the production or consumption of a good/service.
 - Tax on petrol for costs associated with air pollution and road maintenance approximately 39.5c per litre -> used to pay for negative externality because people buy less and thus reduces pollution.
- Government providing public sector goods.
 - Providing merit goods and the government has total control over the production methods & amounts produced.

Global Agreements

- Montreal Protocol (Banning CFC).
- Paris Climate Agreement.