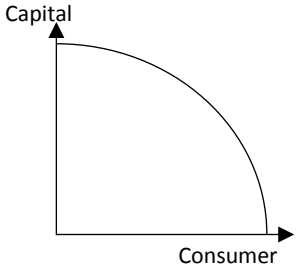
The Foundation of Economics

Scarcity Situation in which the resources available for producing output are insufficient to satisfy wants.

Opportunity Cost Measures the cost of using resources for a certain purpose, in terms of the next best alternative forgone.

PPC Shows all the maximum combinations of 2 goods that an economy can produce within a certain period, with a certain technology and when all available resources are fully and efficiently employed.

Productive Efficiency The economy is producing at maximum output with the given technology and resources, or producing output with the lowest possible unit costs.

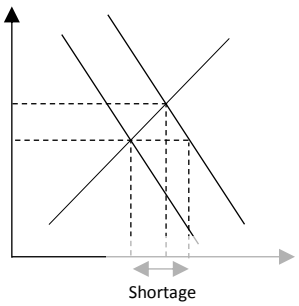


- All points on PPC is productive capacity
- Only one point is allocative capacity

Allocative Efficiency The right amount of resources has been allocated to produce the right quantity of goods and services consumers most desire.

Free market Characterised by a large number of buyers and sellers where each participant is motivated by self-interest and they can own land and capital. There is intense competition among sellers and resource suppliers. Resources are allocated through price mechanism.

Price Mechanism System where buyers and sellers interact to determine allocation of resources among competing uses.



- Economy initially at P and Q.
- D↑ from D to D_1 ➔ P begins to ↑, acting as:
  - A **signal** to producers and consumers that there is a shortage
  - An **incentive** to:
    - Producers: to produce more Q, leading an upward movement along S, greater willingness and ability to produce as P↑
    - Consumers: Buy less than Q_1, leading to an upward movement along D_1, lower willingness and ability to buy as P↑
- New market equilibrium established.
- Resource allocation has taken place.

Centrally Planned economy Relies exclusively on government direction and coordination.
Characterised by all factors of production owned by the state and allocation of resources is done by the state.

Mixed economy Resources allocated partly via PM and partly by government.

	Characterised by 2 sectors (i.e. private and public) where resources are owned partly by both sectors, freedom of choice and enterprise is limited by government, and decisions on how resources are allocated are made with reliance on both the private and public sector.
Resource Allocation	Assigning specific resources to the production of specific G&S.

1.1 Competitive Markets

Market	Where buyers and sellers interact to carry out economic transactions.
Demand	Refers to quantities of a product that consumers are willing and able to buy at various prices and various quantities in a given time period, CP.
Income effect	Increase in P of the good, money income can buy fewer units of the good.
Substitution effect	Increase in P of good cause consumers to buy fewer units as they switch to cheaper substitutes.
Substitutes	Alternative products that satisfy the similar wants or needs. **Firms may want to diversify product range** so that if the price of a substitute good falls (e.g pepsi), the firm will not suffer an extensive loss of revenue (e.g sale of c oca cola). An example is the Coca Cola company itself, which has produced Dasani, a brand of bottled water, on top of just Coca Cola
Complements	Goods that are used jointly together to satisfy some particular want. Agoda.com, a hotel booking company has collaborated with Singapore Airlines. When customers book hotels with via Agoda, they can earn KrisFlyer miles, which can be used to pay for future flights on SQ. Incentivizes more customers to fly with SQ and use Agoda Another way firms might want to maximise revenue is to **buy over a firm producing a complement good**. This way they would have more control over the price of the complement good, which allows them to maximise profit from sale of both goods (An example is Apple buying over beats, which sells headphones)
Supply	Refers to quantities of a product that suppliers are willing and able to sell at various prices and various quantities in a given time period, CP.
Derived Demand	Demand for a good is a derived demand when it is needed to produce other goods.
Competitive supply	Goods produced with the same resources such that resources used in one good cannot be used to produce the other.
Joint supply	Goods produced jointly with the same resources.
Indirect Taxes **(Raises cost of production)**	Imposed on spending to buy goods and services, paid partly by consumers but are paid to the government by producers. ▪ Raise revenue (Tax yield greater when D inelastic relative to S) ▪ Restrict production or consumption of good (D elastic relative to S)

Gasoline tax in USA, used to earn government revenue for maintenance of road infrastructure
Sugary drinks tax in UK (8 pounds per litre), used to earn government revenue to invest in sports in schools.

Subsidies **(lowers cost of production)**

Payment made by the government to producers to encourage the production of certain goods, but not in exchange for any goods or services (more effective when D price elastic relative to S).

Equilibrium

State of balance between different forces, such that there is no tendency to change.

At market equilibrium:

- Welfare of society maximised because sum of CS and PS is maxed.
- MB = MC; extra benefit of getting one more unit of the good is equal to the extra cost of producing one more unit of the good.

Equilibrium price **(market clearing price)**

Occurs at a price where the quantity demanded is equal to quantity supplied.

$Q_d = Q_s$

Shortage

Prices below P_e, $Q_d > Q_s$, puts upward pressure on the price.

Surplus

Prices above P_e, $Q_d < Q_s$, puts downward pressure on the price.

Consumer surplus

Difference between what the consumers are willing and able to pay for a unit of a good and what they actually pay for that unit of a good.

Producer surplus

Difference between what the producers receive from the sale of a unit of good and the price at which the producers are willing to make that unit of good available for sale.

1.2 Elasticities

PED

Responsiveness of the Q_d of a commodity to the changes in its price, CP.

$$PED_A = \frac{\%\ \Delta\ in\ Q_d\ of\ A}{\%\ \Delta\ in\ P\ of\ A}$$

PED > 1: Price elastic demand
PED < 1: Price inelastic demand
PED = 1: Unitary PED

XED

Responsiveness of the Q_d for one good to changes in price of another good.

$$XED_{AB} = \frac{\%\ \Delta\ in\ Q_d\ of\ A}{\%\ \Delta\ in\ P\ of\ B}$$

+ve XED: substitutes
-ve XED: complements
Larger the XED value, close the sub/comp
XED = 0: independent

YED

Responsiveness of demand for a good to a change in income, CP.

$$YED_A = \frac{\%\ \Delta\ in\ Q_d\ of\ A}{\%\ \Delta\ in\ income}$$

+ve YED: Normal goods
YED > 1: Luxuries
YED < 1: Other normal goods
-ve YED: Inferior goods

PES

Responsiveness of Q_s of a good to a change in its own price, CP.

$$PES_A = \frac{\%\ \Delta\ in\ Q_s\ of\ A}{\%\ \Delta\ in\ P\ of\ A}$$

PES = 0: Perfectly price inelastic
0 < PES < 1: Price inelastic
PES = 1: Unitary price elastic

1 < PES < ∞: Price elastic
PES = ∞: Perfectly price elastic

Primary Product — Natural resource that has not been manufactured, and includes agricultural produce and produce obtained from the land. (Low PED, YED, PES)

Primary Product Problem:

Short-run:

- Unplanned fluctuations in supply – seasonal nature, unexpected circumstances; land, labour and machinery devoted to non-agricultural uses cannot be quickly returned to agriculture use when D rises.
- Cyclical fluctuations in demand (food is necessity)

Long-run:

- YED low ➔ increases in income will be spent on consumer durables rather than agricultural products
- Improvements in agricultural technology and govt subsidies ➔ supply increases in greater proportion

Manufactured Product — Manmade good, including processed good.

1.3 Government Intervention

Price Controls (Result in market disequilibrium) — Setting of minimum and maximum prices by the government so that prices are unable to adjust to their equilibrium level determined by market demand and supply, resulting in shortages or surpluses.

Price ceiling (Benefit Consumers) — Legal maximum price that is set below the market equilibrium.

Objective: affordability of essential goods and services ➔ fairer distribution

Apartments in Helsinki, Finland (2013)

On food in Venezuela (2006): Long queues on streets for food, cross border smuggling of food, empty supermarket shelves, black markets

Rent Control — Maximum legal rent on housing, which is below the market determined level of rent.

New York – 29% of rent-controlled houses are in a deteriorated state (compared to 8% of uncontrolled houses)

Price floor (Benefit Producers) — Legal minimum price that is set above the market equilibrium price.

Objective:

Product market: Transfer of income from consumers to producers, thereby increasing producer income.

Labour market: Improve the SOL of low-wage workers, who tend to possess low skills and prevent exploitation by employees.

On butter in the European Union (2009), a part of the EU Common Agricultural Policy (CAP). A reason this was implemented was falling butter prices due to falling world demand.

On rice in Thailand to increase the income of farmers resulted in a rice mountain, and a deficit in the government's budget as they borrow to buy the surplus rice.

1.4 Market Failures

Market failure	Failure of market to achieve efficiency in the allocation of society's resources, resulting in over-allocation of resources (over-provision of goods) or under-allocation of resources (under-provision of goods) in the absence of government intervention.
Economic efficiency	Situation where each good is produced at minimum average costs and where consumers and producers get the maximum benefit from their resources. (MPB = MPC must hold in all the markets in the economy)
Productive efficiency	Situation where firms are producing a given output with the minimum costs or producing the maximum output with a given amount of input. (Represented by max PS and CS)
Allocative efficiency	The right amount of resources has been allocated to produce the right quantity of goods and services consumers most desire. (Represented by MPB = MPC)
Social efficiency	Marginal benefit to society is equal to the marginal cost to society. (MSB = MSC)
Externalities	Third-party effects of production and consumption experienced by third parties other than the consumer and producer.
Positive externalities	Benefits from production or consumption of good experienced by people other than the producer or consumer. **Consumption** **Legislation**: Compulsory polio vaccinations for newborn babies in Singapore, compulsory immunisation for primary school students/Compulsory primary education in Singapore (6-15 y.o) **Direct provision**: In Singapore, citizens in public schools pay only miscellaneous fees, $6.50/month (primary schools), $10/month (secondary schools), $13.50/month (pre-university) Free entry to museums in Singapore for citizens and PRs **Subsidies**: Approximately 75% of cost of university education in Singapore is subsidised/Up to 80% subsidy for patients in lower class wards in public hospitals **Production** **Public Provision**: Eg. Workforce Development Agency (WDA): Provision of skills training for workers in different industries, aim to boost employment through continuous learning and skills upgrading
Negative externalities	Costs borne by third party who are not involved in the consumption or production activity, for which they are not compensated for. **Consumption** **Cigarettes (policies):** Indirect specific tax in Singapore ($0.32/stick) Legislation: No smoking in crowded public areas (within 5m of bus stop), Negative advertising: printing gruesome pictures of the lungs of deceased smokers on cigarette packs **Alcohol (policies):** In Singapore, no consumption of alcohol in public between 2230 & 0730 **Production**

Taxes: Norway considering scaling down on carbon taxes. The tax will result in a fall in Investment in the oil sector (major GDP contributor).
Tradable pollution permits: European Union Emissions Trading Scheme (EU), Carbon Production Reduction Scheme (Australia)
Regulation/Agreements: ASEAN Agreement on Transboundary Haze/China in 2013 initiated anti-pollution measures including compulsory installation of pollution abatement equipment → difficult to understand pollution problem for decades due to ineffective data collection on pollution across various towns and villages.
Negative externalities: Pollution by burning coal in China causes 1.6 million deaths in China per year, Haze caused by burning of forests in Indonesia estimated to have caused 100000 deaths in Indonesia, Malaysia, Singapore (2016)

Merit goods Goods and services deemed socially desirable by the government.

Demerit goods Goods and services deemed socially undesirable by the government.

Public goods Goods that would not be provided at all in the free market. *(Missing market)*

Non-excludability Impossible or extremely costly to exclude any consumer from the benefit of the good.

Free rider problem Possible for a person to consume the good without having to pay for it.

Non-rivalrous **(MC admitting 1 more user of good is zero)** The consumption of the product by one additional person does not diminish another person's ability to consume the product.

Common access resources Typically natural resources in which no one owns them *(lack of ownership)*. They do not have a price and are available to anyone to use without payment.

- *Non-excludable (no price):* nature of resource and inability to charge for them lead to over-consumption or over-use → depletion
- *Rivalrous (after one uses, next person cannot)*

- Unlimited fishermen have access to large amounts of fish
- They fish up to the point where MPC = MPB
- Since lake is common resource, fishermen no incentive to take into account how their fishing affects the opportunities of others.
- Fishermen understates the true cost to society as more fishing reduces the stock of fish (fishing > replenishing), making less available for others ➔ allocative inefficiency.
- Difficult to exclude people from using them. Inability to charge a price on them → overuse/over-consumption → depletion of resources.
- Creates WL and so market failure.

Overfishing of Atlantic cod off the coast of Newfoundland in 1992 (How severe? 20 years on, the cod population has not rebounded)
Overuse of forests It estimates that there were more than six trillion trees however that figure now sits at around 3.04 trillion. Estimated 15 billion trees get cut down each year.

Total Allowable Catches (TAC)/Common Fisheries Policy (CFP) schemes in EU: Quota system limiting amount of fish caught per country
Examples of good management of CARs: **New Zealand,** quota system in place, e.g., only fishes that have reached adult size can be caught. This ensures sufficient fishes in the sea to reproduce, ensuring sufficient fish for future generations

Sustainability Exists where the consumption needs of the present generation are met without reducing the ability to meet the needs of future generations.

2.1 Level of Overall Economic Activity

National Income A measure of the value of the output of the goods and service produced by an economy in a given time period, usually a year.

Problems with using NI stats to measure living standards

Large informal sectors (legal & illegal): eg Africa
High income inequality: Singapore (0.46), South Africa (0.64)
High output of non-merit goods: e.g North Korea, nuclear weapons
Externalities: Pollution in China
Leisure time: Singapore (46 working hours/week), Sweden (31 working hours a week, some companies adopting a 6 hour work day)

Saving Income that households choose not to spend but to put aside for the future.

Imports G+S that have been produced in other countries and purchased by domestic buyers.

Exports G+S produced domestically and purchased by foreigners.

GDP Market value of all final G+S produced over some period of time, usually a year, by *productive factors* that are located within the geographical boundaries of the country, *before the provision for capital consumption*. (Depreciation)
**Depreciation: Capital that wears out or has become obsolete during the course of production.*

	Singapore	France
GDP/cap	60, 900	35, 133
Working hours/week	43	35

GNP Market value of all final G+S produced over some period of time, usually a year, by productive factors owned by residents of the country, irrespective of whether these factors are located within the geographical boundary of the country or abroad, *before the provision for capital consumption*.

Nominal value A measure of output and income in terms of current prices (prices at any given moment in time).

Real value
(Takes into account inflation) A measure of output and income in terms of constant prices that prevail in one particular year; therefore real values eliminate the influence of price level changes over time.

GDP deflator Index of the avg prices of all the components of GDP (monitor avg level of prices in economy). Measures current year level of prices relative to level of prices in base year.

$$GDP\ deflator = \frac{Current\ year\ price}{Base\ year\ price} \times 100$$

$$Real\ GDP = \frac{Nominal\ GDP}{GDP\ deflator} \times 100$$

$$PPP = \frac{Average\ Price\ of\ G\&S\ in\ Country\ A}{Average\ Price\ of\ G\&S\ in\ Country\ B}$$

Purchasing Power Parity Rate	Rates of the currency conversion that equalise the purchasing power of different currencies by eliminating the differences in domestic price levels between countries. PPP measures how many units of one country's currency are needed to buy exactly the same basket of goods as can be bought with a given amount of another country's currency in that country.
Business cycle	Periodic but irregular up-and-down movements in economic activity, measured by fluctuations in real GDP and other macroeconomic variables. **Boom:** USA before the Great Recession in 2007/ USA after a 10 year period of positive growth between 1991 and 2001, before early 2000 recession. **Recession:** Singapore during G.F. crisis, negative growth in -13% in 4th quarter of 2008 - caused by fall in demand for exports from US and Europe **Depression:** Great depression late 1920s to late 1930s **Recovery/ expansion:** e.g Singapore after G.F. crisis, 37% quarterly growth in 1st quarter of 2010, 14% growth recorded in 2010
Recession	2 consecutive quarters of negative growth in real GDP.

2.2 Aggregate demand and Aggregate Supply

AD	Total expenditure on domestically produced goods and services in an economy over a period of time and consists of the expenditure by households (consumers), firms, government and purchases of domestically produced goods and services, less the spending by domestic residents on foreign-made goods and services.
Real income effect	As price level falls, real income rises and people feel better off. As a result, they tend to spend more leading to the increase in total quantity of goods and services demanded. (Purchasing power increases)
Interest rate effect	As price level falls, consumers and firms require less money to carry out their purchases and transactions. This leads to a decrease in the demand for money, which in turn results in a decrease in interest rates. A decrease in interest rates results in an increase in consumer purchases financed by borrowing as well as investment spending by firms that borrow to finance their expenditures. Hence, a fall in price levels lead to an increase in the spending and a rise in the total quantity of goods and services demanded.
International trade effect **(Substitution effect)**	Lower domestic inflation relative to foreign inflation makes domestic goods relatively cheaper than foreign goods at any given exchange rate. As such, consumers substitute imported goods for domestic goods while foreigners purchase more of the country's exports causing net exports to rise and a rise in total quantity of goods and services demanded.
Consumption **(Satisfy wants and needs)**	Refers to disposable income that households spent on consumer goods and services to satisfy their current wants and needs. Determinants: - Level of consumer confidence

Measure of how optimistic consumers are about their future income and the future of the economy

- Interest rates and availability of credit
  Cost of borrowing or rate of returns to savings
- Level of disposable income
  Income that people have available for spending and/or saving after deduction from income tax etc. and addition of transfer payments

Investment
(Profit maximisation)

Refers to expenditure by firms on plants and machinery as well as inventory stock of raw materials, goods in the process of production and unsold goods.
Determinants:

- Level of business confidence
  Measure how optimistic firms are about future sales and economic activity
- Interest rates
- Changes in level of corporate tax
- Changes in technology

Net exports

Determinants:

- Relative changes in income level
- Domestic prices relative to foreign prices (lead to substitution)
- Exchange rate
- Level of trade protection

AS

Total value of goods and services produced in an economy at different price levels over a particular period of time.

SRAS

Time period when prices of factors of production do not change.
Determinants:

- Change in price of inputs (including imported ones)
- Changes in businesses taxes and subsidies
- Aggregate supply shocks

LRAS

Time period when prices of all resources including labour, are flexible so as to reflect fully any change in the price levels.

Equilibrium national income

No tendency towards a contraction or expansion of national income and this level is maintained unless the economy is disturbed.

Actual output

Real GDP produced.

Inflationary gap

Actual output exceeds the full employment national income i.e. actual output > potential output. There is excessive AD relative to the level that would give rise to full employment output level.

Deflationary gap

Actual equilibrium national income is below full employment national income i.e. actual output < potential output.

Capital goods

Goods such as machinery and equipment which are used to produce consumer goods and other capital goods.

Consumer goods

Consumed by households which yield satisfaction e.g. clothes, cars

Horizontal section: Greece (24% unemployment rate in 2015)

Intermediate section: China (high growth and high inflation)
Vertical section: Singapore, UK (unemployment rate is roughly equal to natural rate of unemployment)

2.3.1 Unemployment

Low unemployment (about natural rate of unemployment): Singapore (2%)
High unemployment: Spain (20%), France (10%), Greece (25%), and generally many LEDCs, eg Nepal (46%), Mozambique (60%)
High youth unemployment (problems with measuring unemployment): Spain (40-60%)
Cyclical unemployment: USA financial crisis

Unemployed	People of working age who are without work and actively seeking employment or waiting to take up an appointment.
Underemployment	People of working age with part-time jobs when they would rather work full-time, or with jobs that does not make full use of their skills and education.
Labour force **(Economically active group)**	Number of people who are employed plus the number of people who are unemployed.
Economically inactive group	Those who are not willing to work and those who are unable to work.
Full employment	Equilibrium in the aggregate labour market i.e. the total number of workers demanded by firms corresponds to the total number of workers supplied at the going wage rate.
Natural rate of unemployment	Sum of seasonal, structural and frictional unemployment; it is the unemployment level of the economy when it is producing at potential output (full employment output).
Frictional unemployment	Occurs when workers are between jobs, in search of better jobs or waiting to begin a new job.
Seasonal unemployment	Demand for certain type of labour fluctuates on a seasonal basis because of variations in need.
Structural unemployment	Mismatch of labour skills demanded by employers and labour skills supplied by workers.
Demand deficient unemployment	Occurs during the downturns of the business cycle.

2.3.2: Inflation

Mild inflation: Indonesia (5%), UK (2%), US (1%)
Galloping inflation: Argentina (11% in 2014), Belarus (18% in 2014), Venezuela (about 60% in 2014, now close to 500% in April 2016, considered hyperinflation)
Hyperinflation: Zimbabwe (80 billion percent in Nov 2008, country now withdrawn own currency, uses US dollars), Germany during WW2 (29500% in Nov 1923

	Deflation: Switzerland (-1% start of 2016), Greece (between -1% and -3% between 2014 and 2016), Japan (1990s, due to aging population). Deflation occurred during Asian Financial Crisis in 1997, consequentially, debt to GDP ratio rose as high as 180% in some ASEAN countries.
Inflation	Period of sustained increase in the GPL in an economy, over a period of time.
Deflation	Period of sustained decrease in GPL in an economy.
Disinflation	Rate of inflation falls.
CPI	Measures the changes in the prices of basket of goods and services consumed by the average household.
PPI	Several indices of prices received by producers of goods at various stages in the production process. E.g. PPI for inputs, PPI for intermediate products, PPI for final goods (At wholesale prices, not retail)
Demand-pull inflation	Occurs when AD persistently exceeds AS (excess demand), when the economy is near or at full employment, causing upward pressure on prices. USA since 2008: Monetary policy: Interest at 5.25% in 2006, to 0.25% in 2008
Cost-push inflation	Occurs when prices are forced upwards by sustained increase in costs of production which are not caused by excess AD. 2013: India faces increasing prices of crude oil and machinery

2.3.3 Economic Growth

Actual EG	Percentage increase in actual growth produced during the given time period considered, usually a year. (Increase in the output of G&S actually produced.)
Potential EG	Percentage increase in a country's productive capacity to produce.
	Sustainable EG Switzerland, about 1% growth per year, with half of power supply from hydroelectricity, 100% of rail network powered by electricity as opposed to diesel, which pollute less. **Sustainability**: Less depletion of non-renewable resources (e.g. coal) used to produce energy, less emission of pollutants & greenhouse gases, which damage the landscape and cause global warming
	Unsustainable EG China, growth rates averaging 10% over last 30 years. **Lack of sustainability**: High industrial output causing air & water pollution, heavy dependence on unrenewable energy sources such as coal. (73% of energy output from coal)

2.3.4 Equity in the Distribution of Income

Equity	Normative issue, based upon the idea that distribution of income is fair and just.

Equality	Equal income distribution across the population. **Low income inequality:** Denmark (0.24), Switzerland (0.28) respectively (based on a 2012 estimate) **High income inequality:** South Africa (0.64), China/ Singapore (0.46)
Size distribution	Examines how equally income is distributed among the population.
Lorenz curve	Graphical distribution of the proportion of national income earned by any given percentage of the population (measured from the poorest upwards) in an economy.
GINI coefficient	Summary measure of the ratio of the area between the Lorenz curve and the 45° line to the whole area below the 45° line.
Poverty	Inability to satisfy minimal consumption needs. Determinants: - Low income - Unemployment - Low human capital (healthcare/education) - Low levels of land ownership and capital - Poverty Consequences: - Low living standards (lead to psychological stress, alcoholism, poor health, low edu → limit job and income earning prospects) - Lack of access to education and healthcare (lower human capital formation, lower productivity, lower incomes) - Social problems - Inability to realise one's full potential
Absolute poverty	People live below a certain level of income that is necessary to meet basic needs.
Poverty line	Minimum income level that is considered sufficient to sustain a family in terms of food, housing, clothing, medical needs and so on. Extreme poverty: < $1.25 a day Moderate poverty: < $2 a day
Relative poverty	People live below the prevailing standards of living that are typical in a society. *The more unequal the income, the greater the degree of relative poverty.*
Tax	Compulsory contribution imposed by the government on individuals or firms. - Obtain revenue - Discourage consumption or production in the presence of negative externalities - Redistribute income
Direct taxes	Tax imposed directly on the individual, household or corporation. Paid directly by the taxpayer to the tax authorities. Personal income tax: tax imposed on individual or household income

	Corporate tax: tax imposed on the profits made by commercial firms and businesses UK: 1988, abolished income tax rates above 40% because many people escaped paying these taxes. Capital gains tax: tax on the increase in value of assets Property tax: levied based on a percentage of the annual value of residential and commercial property
Indirect taxes	Tax imposed on the production of goods and services which firms may pass on to consumers in the form of an increase in prices of goods and services.
Progressive taxes	High income tax payers pay a larger fraction of their income than do low income tax payers. Singapore, Marginal Tax Rate (MTR) on first $20 000 is 0%. MTR for income above $320 000 is 22% (As of 2017)
Proportional taxes	High income tax payers and low income tax payers pay the same fraction of their income as tax.
Regressive tax	Low income tax payers pay a larger fraction of their income than do high income tax payers.
Transfer payments	Payments made by the government to individuals specifically for the purpose of redistributing income. Consider welfare states (not Singapore). e.g. UK (welfare state): Job seeker's allowance (unemployment benefit for people in England, Scotland or Wales seeking employment or working less than 16 hours a week)
Means tested benefits	Available only to whose income falls below a certain level. Income support in UK, some criterion: people between age 16 and pension age, work less than 16 hours a week, low or no income, less than £16,000 savings PA Scheme (Singapore): individual or households who are unable to support themselves due to old age or disability receive a very basic allowance.
Universal benefits	Available for everyone, irrespective of their income, if they fall into a certain category or fulfil certain conditions.

2.4 – 2.6

Fiscal policy	Government manipulating the level of government spending and/or revenue (predominantly gained from tax) as so to affect level of AD. **Expansionary** Obama administration cut income taxes and increased defence spending in 2010, which is the aftermath of the Global financial crisis in 2008. "Fiscal stimulus package of $787 billion included tax cuts and increased government spending passed in early days of President Obama's administration. **Contractionary** Clinton administration (1993 to 2001) raised income tax from 31% (highest rate) to 39% as part of the Omnibus Budget Reconciliation act in 1993. This helped keep inflation low at an average of 2.3% during Clinton's time as president

Automatic stabiliser	In-built stabilisers and left to respond automatically without action by government authorities, to reduce short-term fluctuations of the business cycle.
Discretionary fiscal policy	Use of government budget to influence the level of aggregate expenditure by deliberately: - Changing the amount of government spending on G&S - Changing the level of taxation So as to smooth out business fluctuations and to ensure full employment and low inflation.
"Crowding out" effect	Diversion of funds away from private sector; reduction in private consumption or investment that occurs due to increase in government spending. (includes loanable funds and resources)
Action time lag	Time required between recognising an economic problem and putting the policy into effect.
Effect time lag	After the implementing of a policy, a considerable time period may elapsed before the policy comes into effect.
Monetary policy	Conscious attempts made by the central bank to influence the level of economic activity by changing the money supply or the interest rate. **Expansionary** UK after Brexit in July 2016. Conducting Quantitative easing to lower interest rates from 0.5% to 0.25%. This is to prevent risk of recession as fall in business confidence would reduce foreign investment. **Contractionary** Federal reserve of US raised interest rates from 5.75% to 13% in July 1974 to reduce inflation (about 10%) during 1973-74 oil crisis
Central banks	1. Banker to the government 2. Banker to commercial banks 3. Regulator of commercial banks 4. Conduct monetary policy
Money	Anything acceptable as payment for goods and services.
Factors affecting money supply	- Required reserve ratio (larger the fraction of money commercial banks need to keep in their vaults, the lower the supply of money available they have to lend out) - Discount rate – IR at which commercial banks can borrow if they need from CB (the higher the discount rate, the more costly it is for commercial banks to get hold of extra cash to lend out to customers, lower the money supply)
Interventionist	Rely on GI and deemphasise the role of market forces to achieve growth in potential output. - Investment in human capital - Investment in R&D - Provision of infrastructure

Provision of training: WDA in Singapore, Skillsfuture Singapore (launched in 2016, Singaporeans aged 25 and above get $500 initial credit to pay for skills courses, government plans (though not confirmed yet) to top up this credit from time to time

Investment in infrastructure: Malaysian government spending to build Singapore-KL high speed rail. This may increase productivity as workers/ businessmen can be transported more quickly (faster than plane) and business deals can be made more quickly.

Investment in research and development: Singapore government set up ASTAR (Agency for Science, Technology And Research) in 1991, which is under ministry of trade and industry. Aim was to raise level of science and technology in Singapore. Can be linked to efficiency in manufacturing activity.

Market Oriented

Policies to 'free up' the market and minimise GI.

- Incentive-related
- Labour market reforms
- Policies to increase competition

Lowering personal income tax & corporate tax: Malaysia lowered income tax from 26% (for highest income group in 2015) to 25% in 2016. Corporate tax was lowered by 1 percentage point each year from 2006, where rate was 28% to 25% in 2009.

Lowering unemployment benefits: Some states in US reducing duration in which benefits can be claimed. Approximately 1.3 million people who are unemployed on long term benefits will lose benefits by end of 2013.

Removing/ reducing minimum wage: Kentucky, US reduced a minimum wage from $10.10/ hour to $7.25/ hour in December 2015

Privatisation: Sale of Singtel (1992), Singapore Power (1995) to private enterprises in Singapore. Proposed privatisation of SMRT