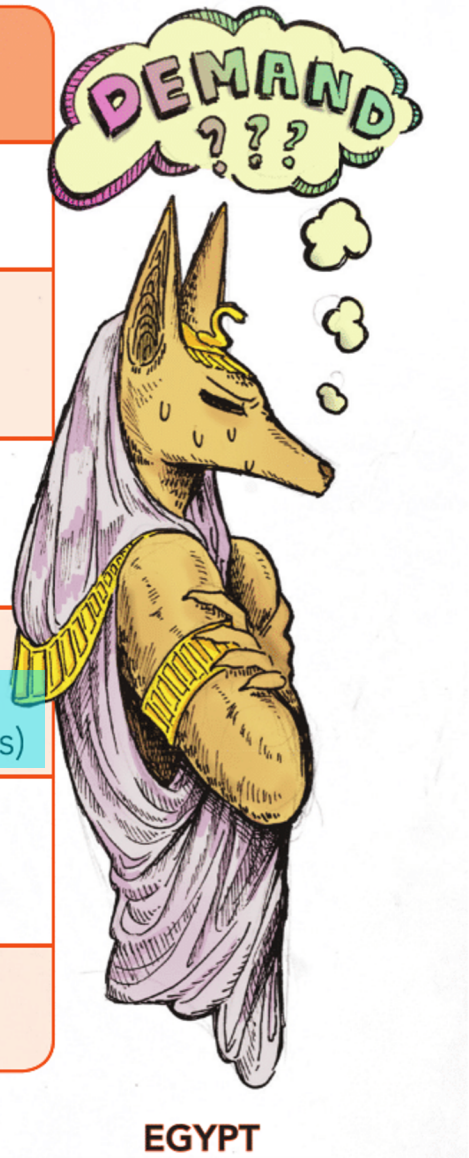
Demand and Supply

Factor (non-price)	Examples of how factor affects demand (vice versa)	Effect on DD
E Expectation of future prices	Expect future price ↑, present demand ↑	↑
G Goods (inter-related)	Substitute goods: Goods that can replace each other. When price of Good A ↓, DD for Good B (substitute) ↓	↓
	Complement goods: Goods consumed together. When price of Good A ↓, DD for Good B (complement) ↑	↑
Y Income	Increase in income ➡ more disposable income ➡ more purchasing power	↑ (assuming normal goods)
P Population	Changing population demographic ➡ ageing population's demand for healthcare ↑	↑
T Taste and preference	Increase in healthy habits ➡ less demand for junk food	↓



NOTE Arrows under *Demand* can go both ways.

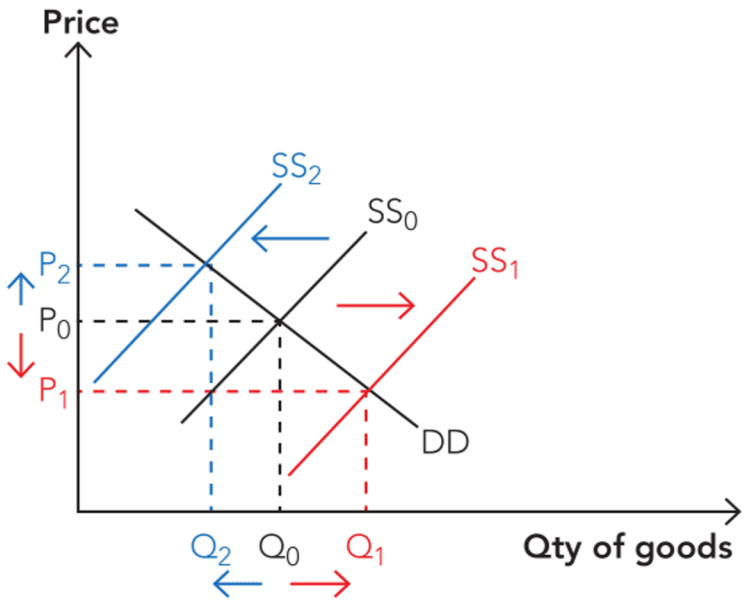
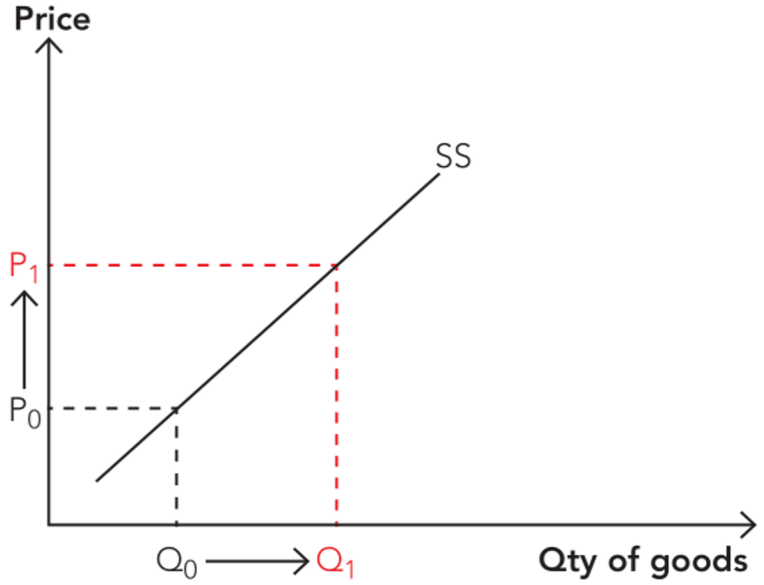
Demand and Supply

Factor (non-price)	Examples of how factor affects supply (vice versa)	Effect on SS
W Weather	Adverse weather events destroy crops.	⬇
E Expectation of future price changes	Pessimistic business outlook ➡ predicting recession and a fall in future price level ➡ produce more to sell at current price	⬇
T Technology	More advanced technology ➡ more efficient	⬆
P Price of related goods	Competitive in supply: Produced to replace another. When price of Good A ⬆, SS for Good B ⬇	⬇
	Joint in supply: Produced together when price of Good A ⬆, SS for Good B ⬆	⬆
I Input price	Factors of production become more expensive	⬇
G Government policy	Strict government regulations ➡ harder to produce	⬇
S Sellers in market	More producers enter the market.	⬆

WET PIGS

NOTE Arrows under *Supply* can go both ways.

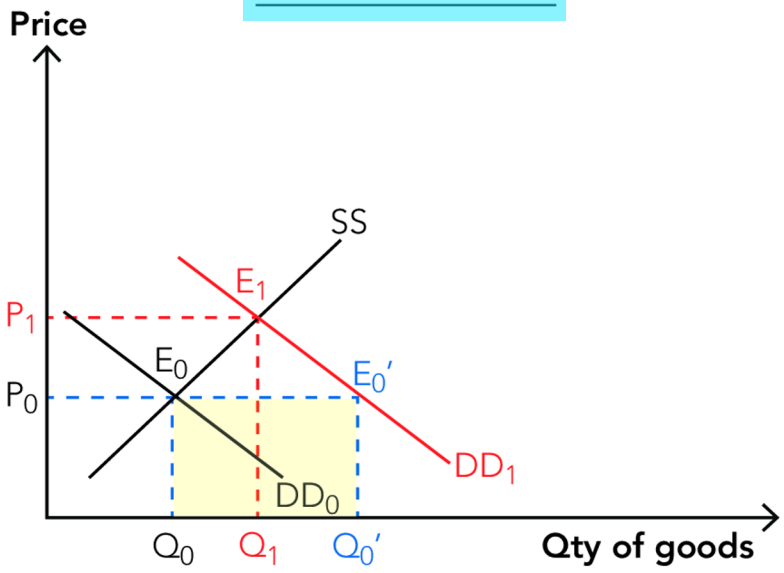
Demand and Supply

Change in **Supply** (WET PIGS)	Change in **Quantity Supplied** (Price factors)
	
1) ⬆ SS ➡ rightward shift in curve from SS_0 to SS_1	1) Change in price of goods ➡ price rises from P_0 to P_1
2) ⬇ SS ➡ leftward shift in curve from SS_0 to SS_2	2) Increase qty supplied from Q_0 to Q_1 (no SS shift) ➡ movement upwards along SS curve as producers are incentivized to produce more at a higher price.

Demand and Supply

Shortage

Increase in Demand



1) At initial equilibrium price, Q_d ⬆ from Q_0 to Q_0' while Q_s remained at Q_0 ➡ **shortage** as $Q_d > Q_s$ $(Q_0' > Q_0)$

2) Price ⬆ acts as **Signal** that consumers demand ⬆

3) Producers **Incentivized** to produce more ➡ more resources allocated ➡ Q_s ⬆ from Q_0 to Q_1 ➡ shortage eliminated

4) Consumers unwilling/unable to pay P_1 are **Rationed** out of the market ➡ Q_d ⬇ from Q_0' to Q_1 ➡ shortage eliminated

03 Elasticity Concepts

Price Elasticity of Demand (PED)

Refers to degree of responsiveness of qty demanded to changes in its own price ➡ ceteris paribus

Price Elasticity of Supply (PES)

Refers to degree of responsiveness of qty supplied to changes in its own price ➡ ceteris paribus

Formula for PED

$$\text{PED} = \frac{\%\text{ change in qty demanded}}{\%\text{ change in price of good}}$$

Formula for PES

$$\text{PES} = \frac{\%\text{ change in qty supplied}}{\%\text{ change in price of good}}$$

Income Elasticity of Demand (YED)

Refers to degree of responsiveness of quantity demanded to changes in consumer's income ➡ ceteris paribus

Cross Elasticity of Demand (XED)

Refers to degree of responsiveness of quantity demanded for good A to changes in price of good B ➡ ceteris paribus

Formula for YED

$$\text{YED} = \frac{\%\text{ change in qty demanded}}{\%\text{ change in income}}$$

Formula for XED

$$\text{XED} = \frac{\%\text{ change in qty demanded of Good A}}{\%\text{ change in price of Good B}}$$

Elasticity Concepts

Types	Law of PES: Always positive due to Law of Supply			
Magnitude	PES = 0 – Perfectly price inelastic in supply	0 < PES < 1 – Price inelastic in supply	PES = 1 – Unitary price in elastic supply	1 < PES < ∞ – Price elastic in supply
How it affects	For every change in price ➡ no change in qty supplied	Changes in price ➡ less than proportionate change in qty supplied	Change in price ➡ same change in qty supplied	Change in price ➡ more than proportionate change in qty supplied
Factors	**How it affects**			**Effect on PES**
	M Factor mobility	Easily switched factors of production ➡ better response to price change		⬆
	I Inventories and stocks	Goods already in stock can be readily sold to consumers on short notice.		⬆
	N Number of producers	Small number ➡ harder to match qty to P change		⬇
	T Time period	More adjustment time for producers to react to P change		⬆
	S Spare capacities	Untapped production capacity can be activated to match changes in prices.		⬆

NOTE Arrows under *Effect on PES* can go both ways.

Elasticity Concepts

Types	Income Elasticity of Demand (YED)		
Magnitude	YED < 0 – Inferior good	0 < YED < 1 – Normal good (Necessity)	YED > 1 – Normal good (Luxury good)
How it affects	↑/↓ in consumer income ➡ ↓/↑ consumption	↑/↓ in consumer income ➡ lesser than proportionate ↑/↓ consumption	↑/↓ in consumer income ➡ more than proportionate ↑/↓ consumption
Factors	**How it affects**		**Effect on YED**
	Level of income	As income rises, consumption of perceived 'better quality goods' increases.	↑
	Nature of goods	The more a type of goods is considered a necessity, the less the level of income will affect the demand. If a good is a necessity, it becomes less elastic.	↓

Arrows under *Effect on YED* can go both ways.

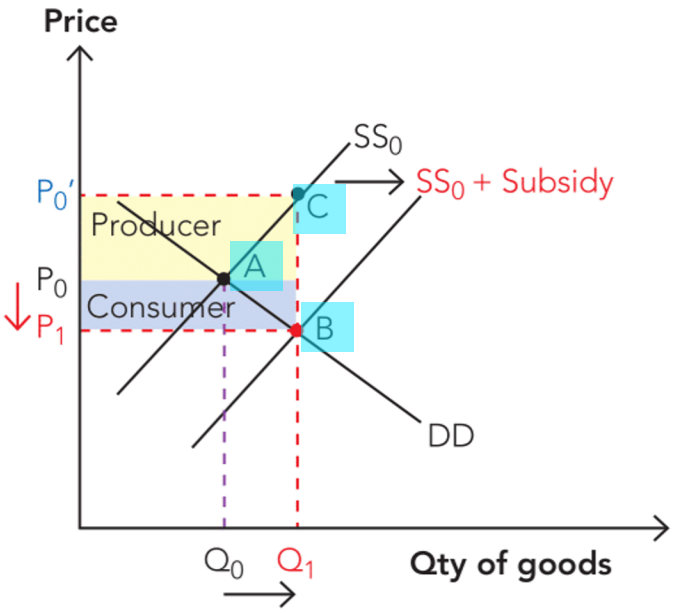
Elasticity Concepts

Types	Cross Elasticity of Demand (XED)		
Magnitude	XED < 0 (Complement)	XED > 0 (Substitutes)	XED = 0 (Unrelated)
How it affects	Fall in price of a type of goods causes rise in demand for another	Fall in price of a type of goods causes fall in demand for another	No effect
Factors	**How it affects**		**Effect on XED**
	Degree of differentiation	If products are too different, they become weak substitutes of each other, e.g. Kindle and paperback.	↓ (less positive)
	Degree of necessity for joint consumption	Higher necessity means stronger complements, e.g. smartphone and SIM card.	↓ (more negative)

Arrows under *Effect on XED* can go both ways.

Subsidy

Purpose: 1) ⬇ COP ➡ encourages consumption/production of merit goods (market failure)
2) ⬆ advantage for domestic producers to compete in international market ➡ Exports more competitive



Explanation

1) Cost of production (COP) ⬇ due to subsidy ➡ ⬆ profitability ➡ producers ⬆ production
2) SS ⬆ ➡ rightward shift in SS curve from SS_0 to SS_0 + subsidy
3) Equilibrium P⬇ ➡ from P_0 to P_1

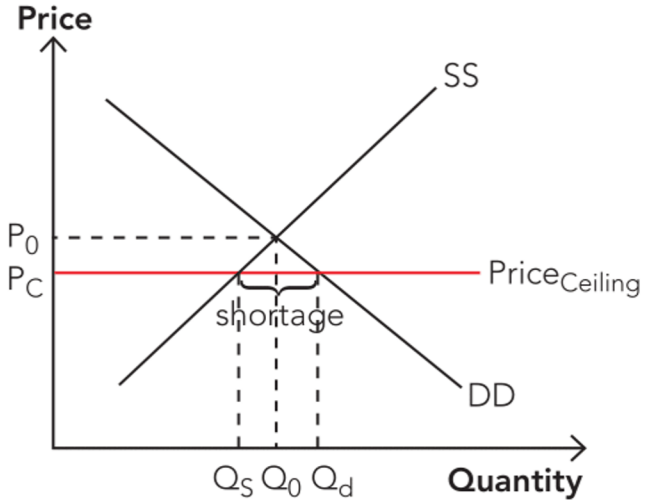
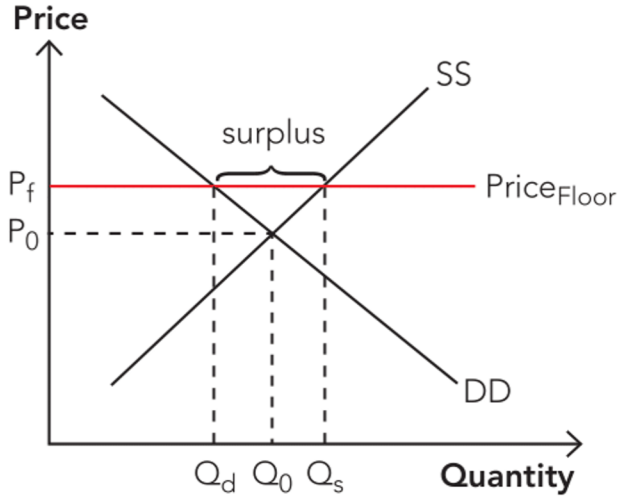
Effects on economic agents

1) Consumers enjoy lower prices.
2) Producers enjoy higher revenue.

Limitations

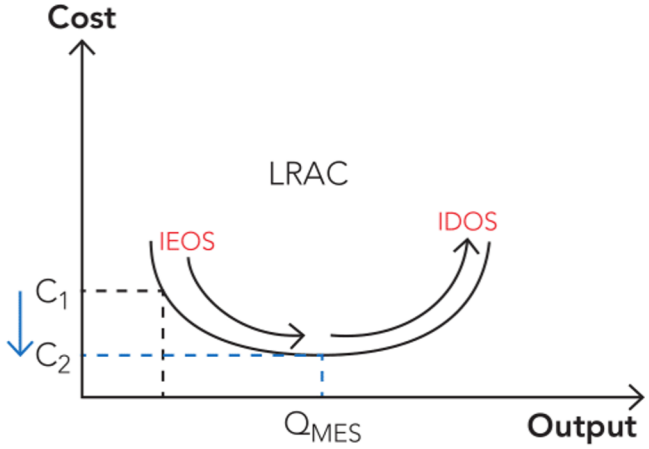
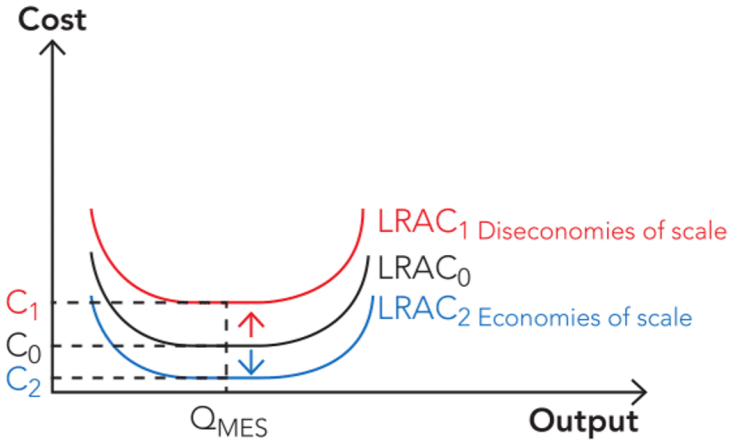
1) Requires substantial government funding
2) Requires good implementation of subsidy system ➡ subjected to corruption

Price controls

Types	Price ceiling/Maximum price	Price floor/Minimum price
Purpose	1) Mainly for necessities 2) Protect consumers ➡ social stability 3) Political consideration	1) Mainly for agricultural/wages 2) Stabilise prices and ensure food supply 3) Prevent farmers from going bankrupt
Graphs		
Explanation	Price ceiling set below market equilibrium price	Price floor set above market equilibrium price
Limitations	1) Creates shortage 2) Hoarding ➡ leads to black market	1) No incentive to innovate 2) Wastage of production resources

For H2 only

Economies of Scale (EOS)

	Internal EOS	External EOS
Definitions	EOS: ⬆ Production Qty ➡ downward movement along AC until MES	EOS: Expansion of industry ➡ ⬇ AC for all firms
	Dis-EOS: ⬆ Production Qty ➡ upward movement along AC beyond MES	Dis-EOS: Expansion of industry ➡ ⬆ AC for all firms
Graphs		

NOTE MES denotes the minimum efficient scale, where no significant or additional EOS can be achieved.

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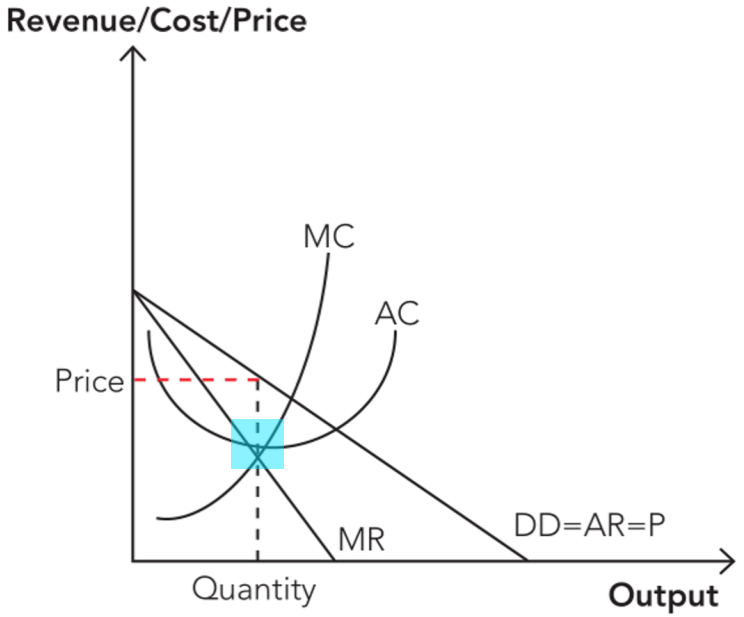
How to draw a market structure diagram

Step 1	Start from your final goal, i.e. Steep DD Curve/Steep MR (MR is exactly half of DD)
Step 2	Insert MC curve ✔.
Step 3	Determine profit maximising output level (Q), i.e. where the MC curve cuts MR.
Step 4	Insert AC curve. *Note: Ensure that MC cuts AC at the minimum point.*
Step 5	Find the price where the profit maximising quantity touches the DD curve.



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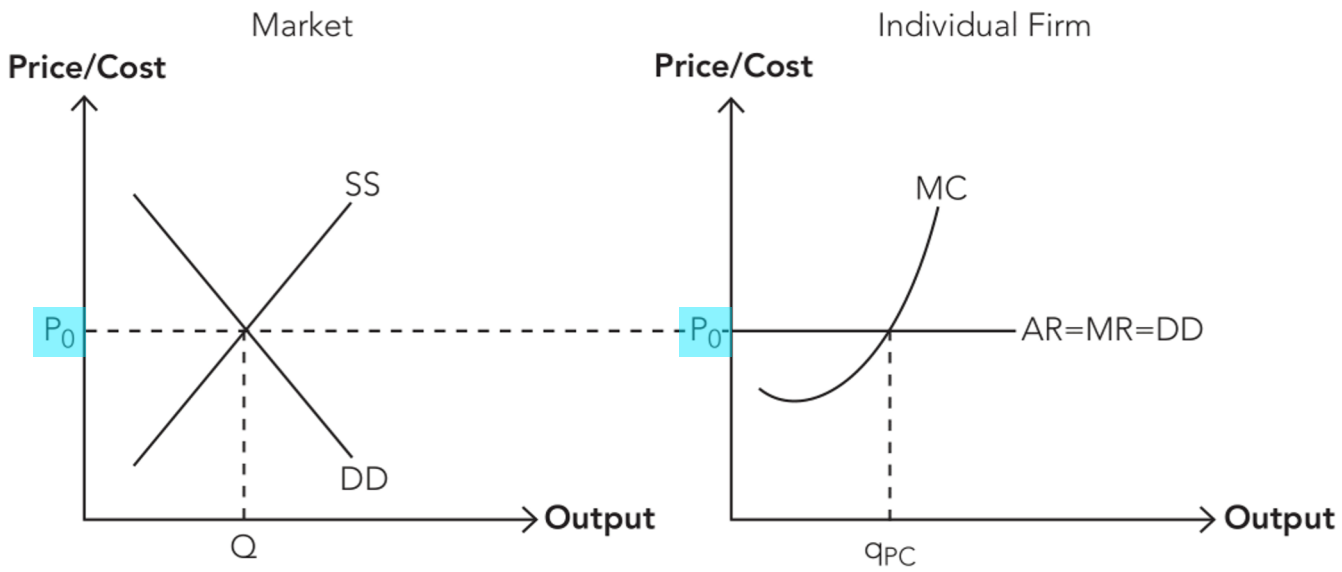
Perfect price competition

Types	Market	Individual Firm
Price & output decision		
Price taker	1) When firms ⬆ P of goods ➡ since goods are identical ➡ consumers switch to purchase from firms selling at lower price 2) No incentive to ⬇ P ➡ can sell any amount at P_0	

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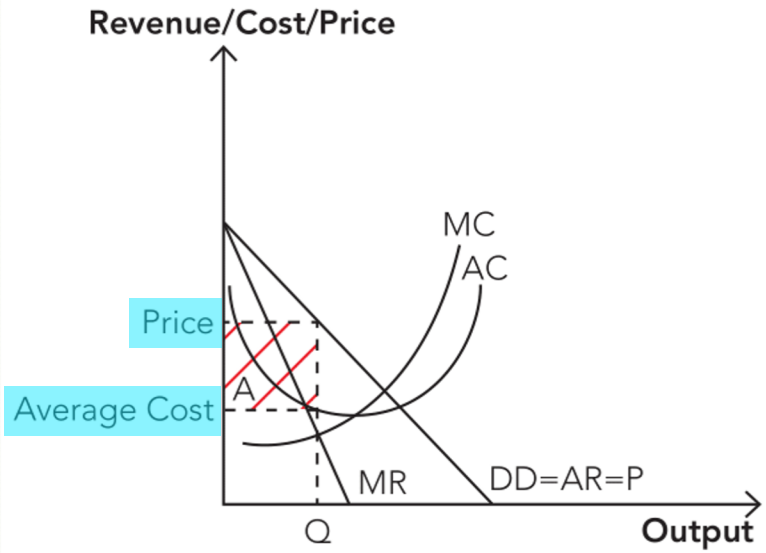
Monopoly

Price & output decision		• Monopoly firms possess a certain degree of market power ➡ ability to set price • Lesser substitutes ➡ steeper demand curve • **Supernormal profits (A)** in the long run
Price setter	Depends on market contestability	

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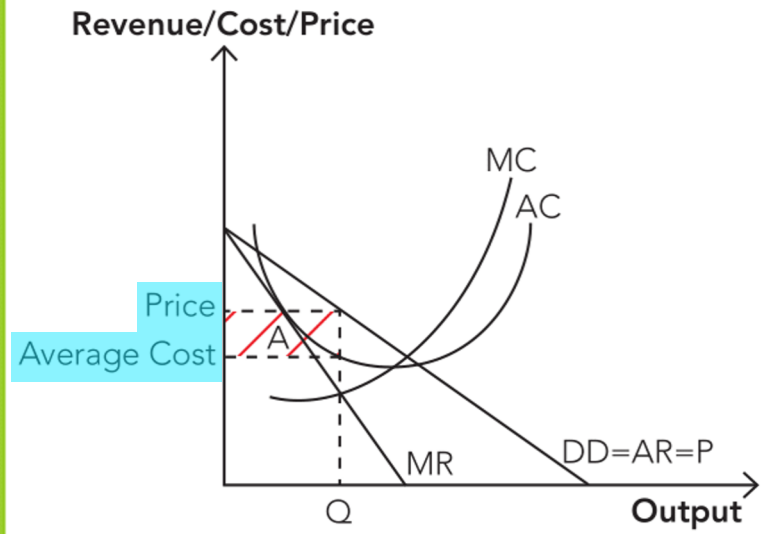
Oligopoly

Price & output decision



1) Oligopoly firms possess a relatively lower degree of market power ➡ ability to set price
2) Low number of substitutes ➡ steeper demand curve
3) **Supernormal profits (A)**
4) Different from monopolistic competition ➡ oligopoly has dominant firms

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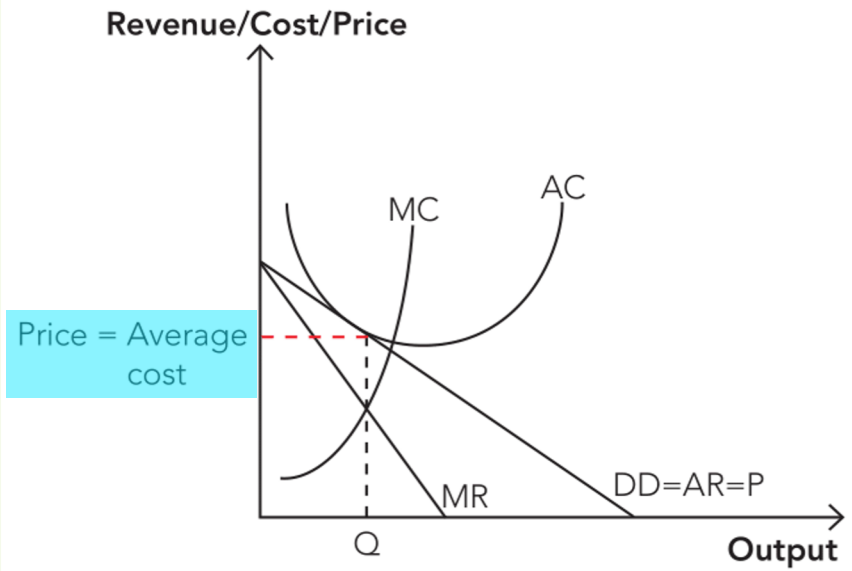
Monopolistic competition

Price & output decision



1) Similar to monopoly ➡ some degree of market power ➡ have some price setting ability
2) More substitutes ➡ gentler demand curve
3) **Normal profits**

Public goods

Goods that are intrinsically desirable but will not be provided by the free market mechanism due to their characteristics of non-excludability and non-rivalry

Types	Non-excludability	Non-rivalry
Explanations	Impossible or too costly to prevent non-paying consumers	Consumption of one unit of good will not deprive another consumer of one unit of the same good.
Examples	Lights from street lighting	Defence team
Links to Market Failure	People consume goods without paying ➡ free-rider problem where demand is hidden ➡ price signal non-existent ➡ no goods supplied by producer despite need in society	Marginal cost of providing goods to a second consumer is zero. Since allocative efficiency is achieved by P=MC, price in market becomes zero ➡ firms unable to supply goods without making loss ➡ no supply
Solutions	Government directly provides goods or hires private firms to do so.	
Cons	1) Government not profit oriented, may become inefficient as it does not keep costs low 2) Hard to determine optimal amount, subject to availability of government funds	

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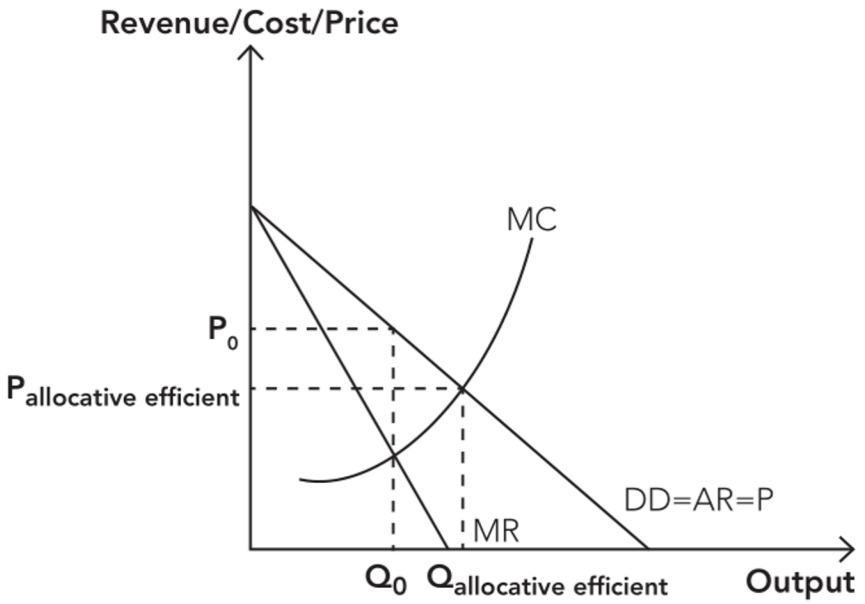
Market dominance

A large single firm's domination of the market, allowing it to set its own price to the detriment of consumers

Examples	Grab's domination of ride-hailing market	
Links to Market Failure	At profit maximising output Q_0, P_0>MC marginal benefit outweighs marginal cost of production ➡ societal welfare not maximised ➡ less allocative efficient, P>MC (P=MC for allocative efficiency)	

07 Introduction to Macroeconomics

Gross Domestic Product (GDP)

Total value of all final Goods & Services (G&S) produced ➡ within the geographical boundaries of a country ➡ within a given period of time

Gross National Product/Gross National Income (GNP/GNI)

Total value of all final G&S produced by the Factors of Production (FOP) owned by the residents of a country, regardless of where they are located, within a given period of time

Nominal GDP/GNI

Measures output and income at the current price

Real GDP/GNI per capita

Real GDP/GNI divided by population of a country

Material SOL

Quantity & quality of G&S available for consumption

Real GDP/GNI

Measures output and income ➡ effects of change in general price level are removed

Standard of living (SOL)

Level of well-being enjoyed by the average person of a country ➡ measures both material and non-material well-being

Non-material SOL

Qualitative aspects of life, e.g. stress levels/pollution

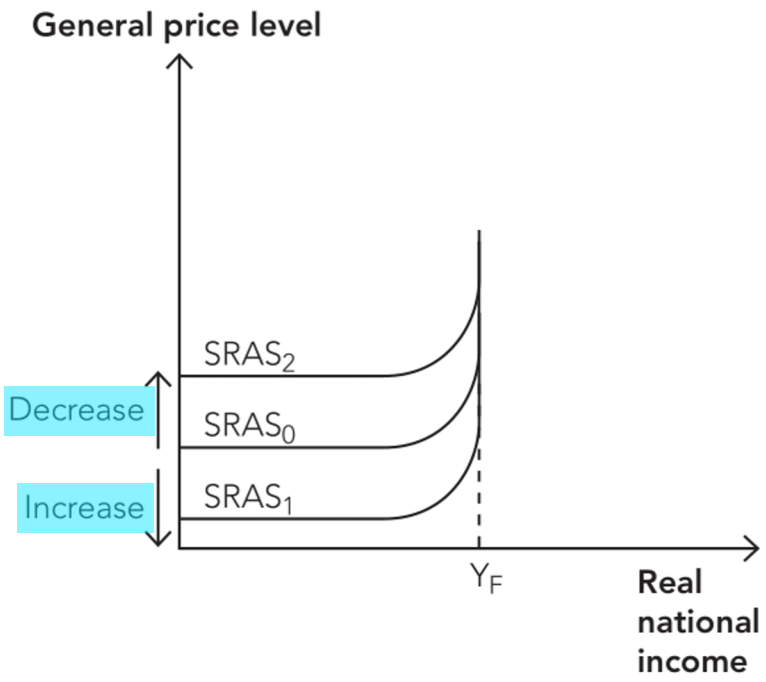
Multiplier process

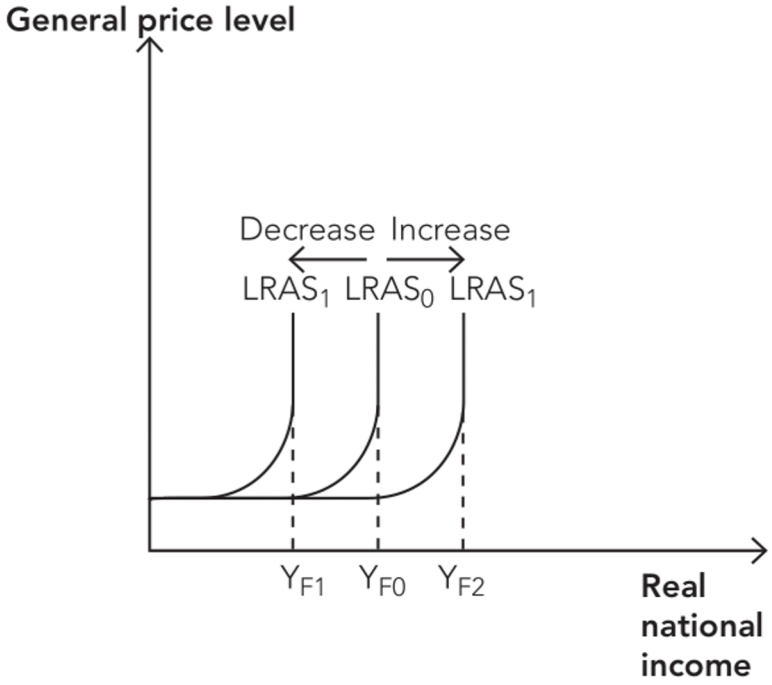
Formulas	$\frac{1}{MPW}$ **MPW: Marginal Propensity to Withdraw*
Components of MPW	**MPW = MPS + MPM + MPT** Marginal Propensity to Save (MPS) Marginal Propensity to Import (MPM) Marginal Propensity to Tax (MPT)
Components of MPC	MPC = change in income ➡ consumption changes **MPC: Marginal Propensity to Consume* MPC = $\frac{\text{Change in consumption (C)}}{\text{change in income (Y)}}$
Explanations	1) Individual spending ⬆ in additional income on consumption ➡ depends on MPC 2) Further creates income for individuals employed by firms ➡ consumer goods 3) Re-spending on consumption ➡ continues until ⬆ in income ➡ negligible

Factors that affect changes in consumption

Factors	How it affects
Expectations of future income	Consumers expect income to ↑/↓ ➡ consumer confidence ↑/↓ expectations of future purchasing power ➡ ↑/↓ consumption
Wealth	↑/↓ wealth ➡ wealth effect ➡ consumer confidence ↑/↓ ➡ ↑/↓ purchasing power ➡ ↑/↓ consumption
Consumer credit/interest rates	↑/↓ interest rates ➡ ↓/↑ borrowing ➡ ↓/↑ spending
Expectations of future prices	Consumers expect prices to ↑/↓ ➡ ↑/↓ consumption in the present

Short-Run AS (SRAS)	Long-Run AS (LRAS)
Changes in cost of production	Changes in productive capacity





NOTE Some schools illustrate SRAS as an upward-sloping curve.

08 Macroeconomic Goals

Main goals	
Strong economic growth	Full employment
Price stability	Healthy Balance of Payment (BOP) For H2 only

Economic growth

Continuous ⬆ in economy's capacity ➡ to produce more goods & services (G&S) ➡ over time

Price stability

Refers to General Price Level (GPL) in an economy increasing at a low, stable and expected rate

Balance of Payment (BOP)

Record/overall statement of all economic transactions between residents of a country and the rest of the world. A healthy BOP means there is no large persistent deficit.

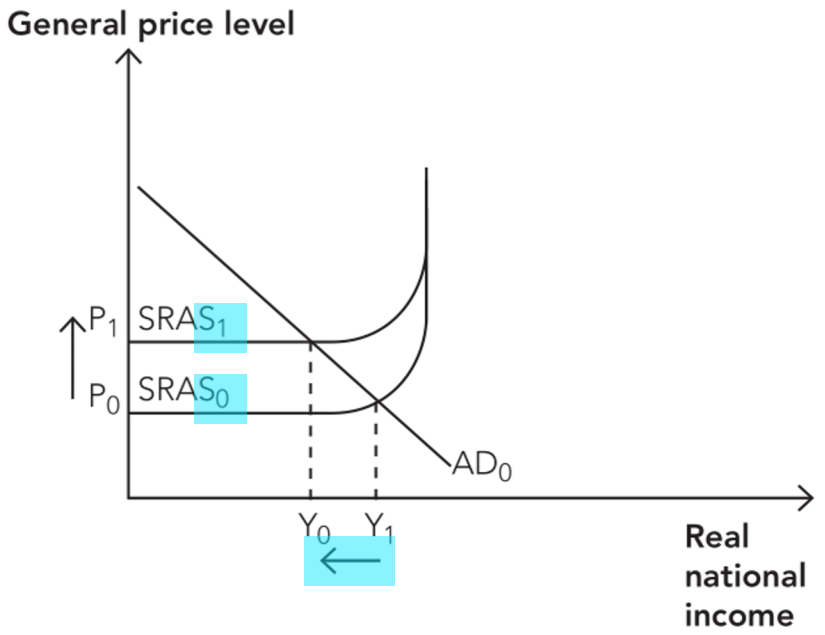
Full employment

Occurs when economy is producing at the full employment output level and there is no demand-deficient unemployment.

Benefits/costs of growth

Benefits	Costs
1) ⬆ material Standard of Living (SOL) 2) ⬆ income ➡ ⬆ levels of consumption for consumers 3) Level of revenue and profits ⬆ for firms 4) Creates jobs ➡ unemployment ⬇ for governments	1) Trade-off between growth and price stability 2) Trade-off between growth and sustainability 3) Trade-off between growth and inclusiveness 4) Trade-off between current and future consumption (Refer to Chapter 10 Conflict of Macroeconomic Goals for a more detailed explanation)

Short-run cost-push inflation

Types	Characteristics	Graphs
Imported	1) ⬆ price of key imports 2) Weak currency	
Wage-push	Wages ⬆ faster than labour productivity	
Profit-push	Due to concentration of market power	
Statutory	Government policies, e.g. tax	

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Causes of BOP disequilibrium

Current account disequilibrium	KFA disequilibrium
Cyclical changes in global demand: Business cycles in Singapore and her partners affect her trade balance. Economic boom or a recession ➡ fall in net exports due to reduced consumer confidence ➡ ⬇ income ➡ ⬇ purchasing power ➡ ⬇ balance of trade **Changes in international competitiveness:** ⬇ price competitiveness of goods and services ➡ fall in demand for exports + rise in demand for imports ➡ ⬇ net exports, vice versa These changes include: 1) Exchange rate 2) Relative inflation	**Changes in relative interest rates:** Low interest rates ➡ would rather invest in somewhere else to earn higher returns ➡ hot money outflow ⬆ **Changes in expected exchange rate:** An expectation of depreciation of domestic currency ➡ speculators sell their domestic currency to purchase foreign currency ➡ capital flight

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BOP deficit

Costs of BOP deficit

1) **Economic growth and falling unemployment**
A BOP deficit caused by falling (X – M) and falling foreign direct investment would reduce AD of economy, decreasing real national income and employment via the multiplier effect.
The reduced foreign investment ➡ ⬇ productive capacity ➡ ⬇ potential growth

2) **Creation of external debt**
Governments may try to correct BOP deficit by selling paper assets to foreign governments ➡ may need to be repaid with interest in the future ➡ could create debt

3) **Rundown of official foreign reserves**
Central bank taps into official reserves ➡ accommodate the BOP deficit ➡ the rundown on foreign reserves compromises the country's ability to ward off potential speculative attacks on domestic currency in the future

Fiscal policy

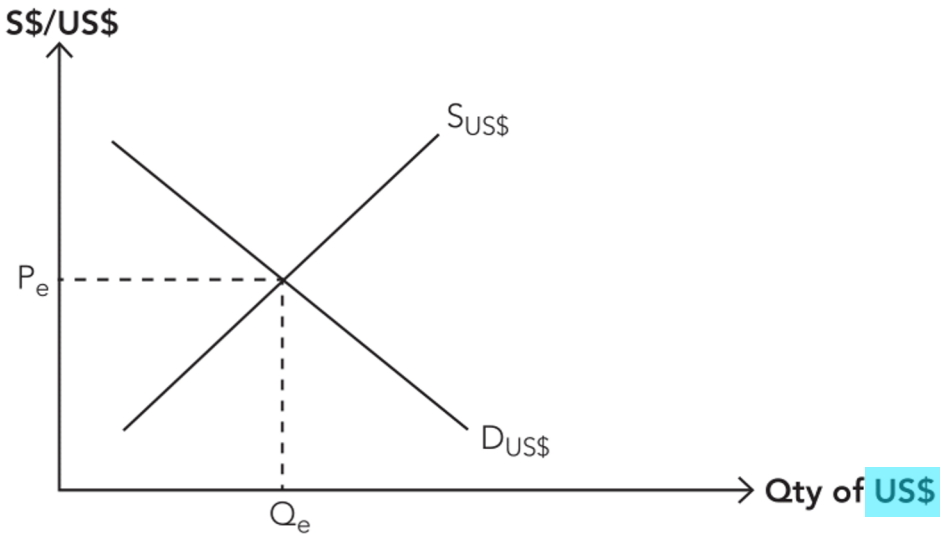
Types	Discretionary fiscal policy		
Purposes	Change in government spending/taxes ➡ expand/shrink the economy		
How it works	**Consumer**	**Producer**	**Government**
	⬇/⬆ personal income tax ➡ ⬆/⬇ disposable income ➡ ⬆/⬇ consumption ➡ ⬆/⬇ Aggregate Demand (AD)	⬇/⬆ corporate tax ➡ Profitability ⬆/⬇ ➡ Investment ⬆/⬇ ➡ ⬆/⬇ AD	⬇/⬆ change in government expenditure ➡ ⬇/⬆ AD
Limitations	1) Size of multiplier 2) Crowding out effect 3) Problem of timing (time lag): a. Recognition lag b. Administrative lag c. Implementation lag		

Monetary policy

Types	Interest rate monetary policy		
Purposes	Influence level of AD in the economy ➡ to achieve desired macroeconomic goals		
How it works	**Consumption**	**Investment**	**Net export**
	⬇/⬆ interest rate ➡ Cost of Borrowing (COB) ⬇/⬆ ➡ incentivise/ disincentivise borrowers to borrow ➡ **consumption** increase/ decrease ➡ AD ⬆/⬇	⬇/⬆ interest rate ➡ COB ⬇/⬆ ➡ incentivise/ disincentivise producers to borrow ➡ **investment** increase/decrease ➡ AD ⬆/⬇	⬇/⬆ interest rate ➡ ⬇/⬆ short term capital flow ➡ ⬇/⬆ demand of currency ➡ depreciation/ appreciation of currency against other countries ➡ ⬆/⬇ in **net exports** ➡ AD ⬆/⬇
Limitations	1) Size of multiplier 2) Interest inelastic investment and consumption 3) Liquidity trap		

Exchange rate	
Definitions	The price of a currency which is its value expressed in terms of another country's currency
Factors that affect exchange rate	1) Interest rates 2) Country's current account / BOP 3) Terms of Trade (TOT) 4) Speculation
Currency appreciation	
Definitions	Refers to increase in the value of a currency in terms of another country's currency
How it occurs	Demand for country's exports ⬆ ➡ ⬆ demand for country's currency ➡ shortage of country's currency in the international market ➡ appreciation of country's currency
Currency depreciation	
Definitions	Refers to decrease in the value of a currency in terms of another country's currency
How it occurs	Demand for country's exports ⬇ ➡ ⬇ demand for country's currency ➡ surplus of country's currency in the international market ➡ depreciation of country's currency

How exchange rate is determined



Factors that affect demand for US$ in foreign exchange market by Singaporeans

1) Purchase US Goods & Services (G&S) (imports)
2) Injection of Foreign Direct Investment (FDI) into the US economy
3) Financial investments bought by Singapore

Factors that affect supply for US$ in foreign exchange market by US citizens

1) Purchase Singapore G&S (imports)
2) Injection of FDI into Singapore economy
3) Financial investments bought by US

NOTE Singapore must sell S$ to purchase US$. Vice versa.

How exchange rate based monetary policy works

Net exports (imports):
Currency appreciates/depreciates against foreign currency ➡ price of imports ⬇/⬆ ➡ assuming Marshall Lerner Condition ➡ consumers switch to/away from imports ➡ net exports ⬇/⬆ ➡ Balance of Trade (BOT) worsens/improves ➡ AD worsens/improves

Net exports (exports):
Currency appreciates/depreciates against foreign currency ➡ price of exports ⬆/⬇ ➡ price competitiveness of good ⬇/⬆ ➡ assuming Marshall Lerner Condition ➡ demand for domestic goods by foreigners ⬇/⬆ ➡ BOT worsens/improves ➡ AD worsens/improves

Employment:
Demand of exports ⬇/⬆ ➡ ⬇/⬆ national output ➡ ⬇/⬆ demand for workers ➡ ⬆/⬇ cyclical unemployment

Marshall Lerner Condition is when (sum of price elasticity of demand of imports and exports) >1.

Quantitative easing

Definitions	Refers to the introduction of new money into money supply by central bank
Purposes	To stimulate the economy by ⬇ long-term interest rates ➡ ⬆ liquidity of money supply
How it works	Central bank prints money ➡ buys government bonds/financial assets from commercial banks and other financial institutions ➡ ⬆ money supply ➡ ⬇ interest rates ➡ ⬆ AD
Limitations	1) Highly inflationary in the future 2) Massive capital outflow to other countries ➡ ⬇ investor confidence

Monetary policy in the context of the US

Housing Crisis (2008)

Why it happened

Remnants of 2000 crisis ➡ Low interest rates and lack of strict lending requirements ➡ investors bought houses as speculative investments ➡ economy turned for the better ➡ possibility of house prices falling ➡ frenzy of selling off houses as many could not afford those houses under normal conditions ➡ mass mortgage defaults

Consequences

House prices rapidly increased since many bought houses as speculative investment ➡ first time buyers priced out of the markets + residents that could not afford had to relocate ➡ lack equity

Homebuyer confidence plummeted ➡ fall in demand

Fall in social order ➡ increase in violence ➡ fear that their own home might be taken from them

Quantitative easing to relieve the problem

Quantitative easing: Injecting liquidity and lowering interest rates ➡ stimulates borrowing and spending ➡ increase in economic growth, e.g. The US Federal Reserve undertook the most successful quantitative easing effort ➡ added $2 trillion to money supply ➡ helped with the crisis

Supply-side policies in the context of Singapore

Wage Credit Scheme (WCS)

Under the WCS, the Government will co-fund 40% of wage increases given to Singaporean employees earning a gross monthly wage of up to $4,000 ➡ lower unit cost of production ➡ firms more likely to remain in Singapore as effects on profits are cushioned + minimal layoff of employees ➡ fall in investment and consumption cushioned

Retraining/training of workers

SkillsFuture Credit: $500 given to Singaporeans above 25 ➡ upgrade their skill set ➡ more efficient ➡ potential economic growth [NERD – Education]

Skills Development Fund (SDF): Subsidised course fees ➡ learn a different skill ➡ lower occupational immobility [NERD – Education]

Encouraging innovation and entrepreneurship

Lean Enterprise Development (LED): Allows Small and Medium Enterprises (SMEs) to tap on relevant assistance schemes and training programmes + transnational manpower support if needed [NERD – Research & Development]

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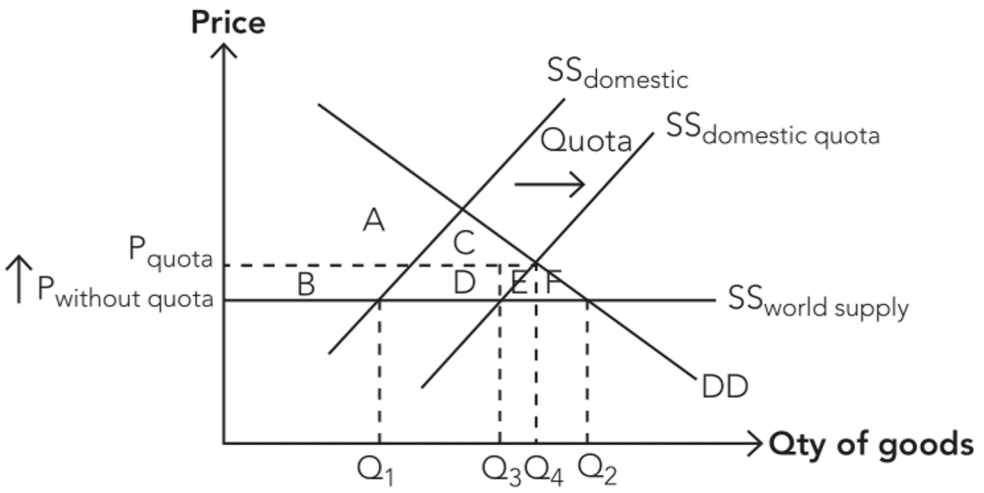
Protectionism

Types	How it works	Graphs
Quota	1) Amount of imports limited < amount of imports under free trade 2) Amount of import under free trade is Q_1Q_2 ➡ imports limited by quota is Q_3Q_4 ➡ P increase from $P_{without\ quota}$ to P_{quota} 3) D + F ➡ deadweight loss	

B

Barriers To Entry (BTE)
Anything that prevents or impedes the entry of new firms into an industry and thereby limits the degree of competition faced by existing firms.

C

Ceteris paribus
All else remains constant.

Central economic problem
Scarcity leads to choices needing to be made, leading to opportunity costs being incurred.

Contestability
How easy or difficult it is for new firms to enter and leave the market.

Competitive supply
Output produced in a competitive market.

Complement
Goods that are jointly demanded. The use of one commodity requires the use of the other commodity in order to generate satisfaction.

Consumer surplus
Difference between the price consumers are willing and able to pay, and the price actually paid.

Cross Elasticity of Demand (XED)
Refers to degree of responsiveness of the change in quantity demanded for Good A to change in price of Good B, ceteris paribus.

G

Government failure
Occurs when government intervention deepens inefficiency, causing cost of intervention to be greater than benefits of intervention.

I

Imperfect information
Occurs when consumers are not fully aware of costs/benefits of a good. Incorrect ideas caused by misinformation and imperfect information.

Implicit cost
Forgone income from use of FOP owned by a firm, e.g. rental.

Income Elasticity of Demand (YED)
Refers to degree of responsiveness of change in quantity demanded to the change in consumer's income, ceteris paribus.

Information failure
Occurs due to imperfect information or asymmetric information.

Internal economies of scale
Refer to the cost savings (reduction in the long run average cost) arising from the increase in scale of production of the firm. An increase in output results in a less-than-proportionate increase in the total cost. Thus average cost decreases as output increases.

Internal diseconomies of scale
Takes place when an increase in output leads to a more-than-proportionate increase in total cost. Thus the long run average cost increases as output increases.

J

Joint supply
Goods that are produced together using the same inputs or source.

L

Law of demand
Inverse relationship between price and quantity demanded, causing a downward sloping demand curve.

Law of diminishing marginal return
Adding a variable factor to a fixed factor causes the output produced by the firm to eventually decrease.

Law of supply
Positive relationship between price and quantity supplied, causing upward sloping supply curve.

Long run
Refers to the time period where all factors of production are variable.

Long Run Average Cost Curve (LRAC)
Shows the relationship between the average cost of a firm and its output as it expands by varying all inputs.

M

Marginal Cost (MC)
Cost of producing an additional unit of output.

Market dominance
A large single firm's domination of the market, allowing it to set its own price to the detriment of consumers.

Market failure
A situation where the free market fails to allocate resources efficiently and there is no maximisation of social welfare.

Marginal Revenue (MR)
Change in firm's total revenue resulting from sale of additional unit of output.

Marginal private benefit
Benefit from an additional unit of a good or service that consumers receive.

Marginal private cost
Cost of producing an additional unit of a good or service borne by producer.

Merit goods
Goods that the government deems socially desirable but under-consumed when left to the free market.

Minimum Efficient Scale (MES)
Smallest quantity of output when LRAC is minimised.

Moral hazard
A situation in which economic agents take greater risks than they normally would as the resulting costs will not be borne by them.

Mutual interdependence
Occurs when firms take into consideration the actions and reactions of rivals.

Production Possibility Curve (PPC)
Maximum attainable combination of goods and services that can be produced by the economy when all resources are fully and efficiently utilised.

Producer surplus
Refers to the difference between the price that producers are willing and able to sell at and the actual price received.

Public goods
Refers to goods that are both intrinsically valuable but none will be provided in the free market. Non-excludable and non-rivalrous.

Q

Quota
Refers to the restriction implemented on the quantity of goods.

R

Rational decision-making
Occurs when decision makers aim to maximise their self-interest.

F

Fiscal austerity
Decision by government to reduce government borrowing and spending.

Fiscal policy
Deliberate management of government spending and taxation to influence the level of economic activity, inflation and economic growth of the country.

Financial account
Transaction consisting of the sum of direct investment, portfolio investment and reserve assets.

Free Trade Agreement (FTA)
A legally binding agreement between two or more countries to reduce or eliminate barriers to trade, and facilitate the cross border movement of G&S between the countries.

Free trade
International trade with no government intervention restricting exports/imports.

Frictional unemployment
Occurs due to imperfect information regarding the demand for labour such that time is required before job seekers can find suitable jobs.

Full employment
Occurs when economy is producing at the full employment output level and there is no demand-deficient unemployment.