

Appendix A1: Summary Table for Demand, Supply and Elasticity Concepts

A List of Acronyms that Help you to Remember Key Determinants of Demand, Supply, Elasticities of Demand and Supply

DEMAND Refers to the quantities of a good or service that consumers are willing and able to buy at various prices over a given period of time, ceteris paribus.	SUPPLY Refers to the quantities of a good or service that producers are willing and able to offer for sale at various prices over a given period of time, ceteris paribus.	PRICE ELASTICITY OF DEMAND	INCOME ELASTICIY OF DEMAND	PRICE ELASTICITY OF SUPPLY
P-TIDE	CPPSE	SNIT	NL	SNIT
Price of related goods (substitutes and complements)	Costs of production (costs of inputs, technology, productivity, taxes & subsidies)	Substitutes	Nature of goods	Spare capacity
aste & preference (influenced by fashion/fad, government policies, advertising and seasons)	Changes in the Prices of Related Goods (competitive supply, joint supply)	N <mark>ecessities</mark>	evel of income	Nature of production (length of production period and ease of factor substitution)
ncome (purchasing power affected by economic performance such as GDP growth rates)	Changes in the Number of Producers	Proportion of ncome spent		nventories /stocks
Demographics (size, age and sex composition)	Supply Shocks (Nature – weather & natural disasters; Man- made – wars, riots; terrorism)	∐ ime period		∎ime period
Expectations (expectation of future income/prices and speculation)	Expectations (Future outlook in terms of profitability)			



Appendix A2: Summary Table for Demand and Supply Elasticity Concepts

	ELA	PRICE ELASTICITY OF SUPPLY		
	Price elasticity of Demand	Income elasticity of Demand	Cross elasticity of Demand	Price elasticity of Supply
Definition	PED measures the responsiveness of quantity demanded of a good to changes in its own price , ceteris paribus.	YED measures the responsiveness of demand of a good to changes in income , ceteris paribus.	CED measures the responsiveness of demand of a good X to changes in price of good Y, ceteris paribus.	PES measures the responsiveness of quantity supplied of a good to changes in its own price , ceteris paribus.
Formula	<u>Note:</u> [% change in Od	Do not forget to include the 'ceteris par % chappe in Od	ribus' condition in the de	finition. % change in Os
Fornula	% change in its own price	% change in income	% change in Pr	% change in its own price
Sign	Always negative due to the law of demand - price and Qd are inversely related – this happens when supply changes (supply curve shifts) As a result, we usually focus on analysing the magnitude.	 Can be positive or negative depending on the kind of goods YED>0: normal (includes both necessities & luxury goods) - demand moves in the same direction of income YED<0: inferior - demand moves in the opposite direction of income 	 Can be positive, negative or 0 depending on the relationship between the two goods CED>0: substitutes - DDx↑/↓, when Py↑/↓ CED<0: complements - DDx↓/↑ when Py↑/↓) CED=0: DDx unchanged when Py 	Always positive due to the law of supply - price and Qs are directly related – this happens when demand changes (demand curve shifts)
Magnitude/	PRICE ELASTIC DEMAND	NORMAL GOOD (YED > 0)		PRICE ELASTIC SUPPLY
Determinants (IMPACT ON PRICE & OUTPUT) <u>Note:</u> Total revenue or expenditure by consumers = P x Q.	CifeEDI > 1) Qd changes more than proportionately than price. E.g. Soft drinks as there are many substitutes which can satisfy similar wants (beverages such as tea, coffee and water) available. Those that form a large proportion of income such as major items like cars and houses will experience a substantial fall when there is a rise in price as consumers will have to sacrifice other needs if they choose to spend on such items. Price Figure 1a $P_0 = \frac{S_0 + S_1}{S_0 + S_1}$	Necessities (0 <yed<1) +<br="">Luxury goods (YED > 1) Necessities (0 <yed<1) Demand increases less than proportionately than increase in income. The more basic a good is, the lower the YED - bread and potatoes. Also the rate at which the desire of a good is satisfied as consumption increases for example food. One need not consume too much food before feeling satisfied thus as income increases there is a less than proportionate increase in consumption of food. However, this will also depend of the level of income of the consumers. An inferior or a necessity good to the rich might be a luxury good to the lower income household. <u>Note:</u> Level of income is different from proportion of income. The former is a determinant of YED while the latter is for PED.</yed<1) </yed<1)>	(CED > 0) For example, McDonald and Burger King, a decrease in the price of McDonald will lead to a fall in the demand for Burger King and vice-versa.	(PES > 1) Qs changes more than proportionately than price. E.g. For low-end manufacturing goods, there are many suppliers in the market, stocks are easily accumulated and the factories are still not operating in full capacity, therefore when price increases, suppliers can respond quickly. Price Figure 1d P_1 P_0 Q_0 Q_0 Q_1 Q_1 Q_1 Q_1 Q_2 Q_1 Q_2 Q_1 Q_2 Q_1 Q_2 Q_1 Q_2 Q_1 Q_2 Q_1 Q_2 Q_1 Q_2 Q_1 Q_2 Q_1 Q_2 Q_2 Q_3 Q_1 Q_2 Q_3 Q_3 Q_1 Q_2 Q_3



 ELA	ELASTICITIES OF DEMAND		
Price elasticity of Demand	Income elasticity of Demand	Cross elasticity of Demand	Price elasticity of Supply
E.g. As technology improves and lowers the cost of production of soft drinks, the supply increases from S_0 to S_1 , quantity increases from Q_0 to Q_1 by more than proportionately as compare to price. Total revenue/expenditure will rise.			Similarly, when demand falls, there is greater impact on quantity as compared to price. <u>Note:</u> A movement along the demand curve is caused by a shift in supply. For PES > 1, supply curves cuts at the
Similarly, when supply falls, there is greater impact on quantity as compared to price.			Y axis.
curve is caused by a shift in supply.			
PRICE INELASTIC DEMAND (PED < 1) Qd changes less than proportionately than price.	Luxury goods (YED > 1) Dd increases more than proportionately than increase in income.	Complements (CED < 0) E.g. Mobile data subscription plan	PRICE INELASTIC SUPPLY (PES < 1) Qs changes less than proportionately than price.
E.g. Demand for cigarettes is price- inelastic due to its addictive nature and it takes time to reduce or quit smoking and smokers tend to be not responsive to a rise in price and only cuts back insignificantly at least in the short-run.	As income rises, people usually prefer to spend a bigger percentage of their extra incomes on luxury goods to improve their quality of life once basic necessities are more or less satisfied. Examples are jewellery, art work and cars.	which are needed together to satisfy the want to make phone calls, use apps and access internet and social media: a fall in the price of subscription	E.g. Some luxury goods such as branded bags with exotic leather are of top quality and they take longer production period (A crocodile skin Hermes bag can take 1 year to complete). Some high-end manufactured goods
That is, when prices rise, people take time to adjust and find alternatives	INFERIOR GOODS (YED < 0)	plan will lead to the rise in demand for	that require very complicated process such as an aircraft will take a very long
a price the longer the time period after a price change, the more price elastic will be the demand for the good.	Dd falls as income increases. As income increases, people usually turn away from products	mobile phone.	beriod to be produce. So even if price is high, Qs will not be able to increase by much quickly.
E.g. Government slams heavy excise duties on cigarettes causing the supply to fall. When supply decreases from S ₀ to S ₁ , quantity decreases from Q ₀ to Q ₁ by less than proportionately as compared to price. Total revenue/expenditure will rise. Similarly, when supply increases, there is lesser impact on quantity as compared to price.	<pre>quality. E.g. canteen food vs restaurant food; bicycles vs cars. Price Figure 1c</pre>	The <u>closer</u> one good is a substitute or a complement of another, the <u>bigger</u> the effect on quantity of the first good as the result of a change in the price of the substitute or complement. Hence, the greater the value of the cross elasticity of demand, e.g. For a close complement, CED = - 1.9 while for a weak substitute, CED = + 0.6.	specific planting and harvesting time and also lack of spare capacity for perishable types. Price Figure 1e P_1 P_0 P_1 P_0 P_1 P_0 P_1 P_0 P_1 P_0 P_1 P_0 P_1 P_0 P_1 P_0 P_1 P_0 P_1 P_1 P_0 P_1 P_0 P_1 $P_$
	<u>Note</u>: The direction of the shift depends on the sign of YED, which determines whether it is a normal or inferior good. The extent of the shift depends on the numerical value of		For PES < 1, supply curves cuts at the X axis. Regardless of PES value, a rise in DD will cause TR/TE to rise and vice versa, since P&Q move in the same direction.

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	ELASTICITIES OF DEMAND			PRICE ELASTICITY OF SUPPLY		
	Price elasticity of Demand	Income elasticity of Demand	Cross elasticity of Demand	Price elasticity of Supply		
		YED, i.e. whether demand is income elastic or income inelastic.				
				Unique Case (PES = 0)		
				A vertical supply curve is said to be <u>perfectly price inelastic</u> . It means that the quantity supplied remains the same when prices change.		
				Examples of goods with a vertical supply curve would include one-of-a-kind antiques, items on auction and quotas such as the Certificate of Entitlements (COEs) in Singapore.		
Application/ Strategy for firms	Pricing strategy: Lower price when demand is price elastic and increase price when demand is price inelastic so as to increase sales revenue.	Identify goods which are normal (luxury goods with YED>1 and necessities with 0 <yed<1) or<br="">inferior (YED<0) & set output accordingly as income levels change. Recession – income falls and demand for inferior goods will rise. So raise production of low-end/no frills products such as budget airlines and hotels. Economic boom – income rises and demand for normal goods will rise esp. luxury goods so produce and market high end goods such as limited edition handbags, locate shops at prime areas as people will shop more in such areas. <u>Note:</u> This is not a pricing strategy but output strategy – what to produce.</yed<1)>	Follow suit by cutting price when market leader/ rivals lower price <u>Note:</u> This is not the same as PED as this is a REACTION to what others have done rather than an initiative. For substitutes: A firm can try to differentiate its services to reduce the positive cross elasticity e.g. A strong marketing campaign sets Under Armour apparel apart from Reebok, reducing their CED from +1.2 to +0.8. With close complements, the firm may consider joint promotions or joint discounts. E.g. a firm offering slimming packages may organize a joint promotion with a	For firms: If supply is very price inelastic, firms would have to make use of technology to improve on the response time. E.g. Farmers use irrigation and seedlings to have more rounds of harvest a year. For government: The supply of agriculture product tends to be price inelastic hence buffer stock schemes can be implemented to stabilise the price of agriculture and income of farmers.		
Limitations (Taskling	Ceteris paribus assumption: A b concepts is the limitation imposed by	asic drawback in terms of real world	hairdresser. application of elasticity	NA		
Assumptions for strategies)	 concepts is the initiation imposed by ceteris paribus assumption is meant except price (PED); income (YED); p any particular point of time, several the economy may be changing simulased on PED alone, the strategy is is a recession, in which this good ass income falls, price will actually drop. Ignores cost side of the profits eq The concepts are only useful in he concepts have anything to say about short, they fail to help the firms in connot take costs into consideration. I 	concepts is the limitation imposed by the ceteris paribus assumption. In the first place, the use of the ceteris paribus assumption is meant to simplify economic analysis. It assumes nothing else changes except price (PED); income (YED); price of a related good (CED) respectively. However, in reality at any particular point of time, several factors such as the price of a related good and income level of the economy may be changing simultaneously . Example: If the demand of a good is price inelastic, based on PED alone, the strategy is to increase price to raise revenue. But if at the same time, there is a recession, in which this good assuming to be a normal good will experience a fall in demand when income falls, price will actually drop. Ignores cost side of the profits equation (Profits = Total revenue – total costs) The concepts are only useful in helping firms to increase total revenue. None of these elasticity concepts have anything to say about cost cutting strategies or productivity enhancing strategies. In short, they fail to help the firms in coming up with strategies to maximise profits as these concepts do not take costs into consideration. In reality firms look at both revenue and costs in formulating				
	 strategies to boost profits. Informational Problem: The validity strategies rest on the crucial assump firms. In other words, it is assumed fir However, in reality this it is often n available is often imperfect or incor imperfect circumstances, there is r 	of applying elasticity concepts in formula tion that all information pertaining to ela ms have perfect information to make rati ot possible for firms to obtain perfect polete and may not even be reliable o o guarantee the strategies adopted to	ating business marketing isticities are available to onal business decisions. information. Information r accurate. Under such by firms will always be			



	ELAS	PRICE ELASTICITY OF SUPPLY		
	Price elasticity of Demand	Income elasticity of Demand	Cross elasticity of	Price elasticity of Supply
	-		Demand	
•	successful even if they were to apply costs into consideration. In reality fir boost profits. Ignores the Supply side of the r elasticity of supply into consideration simply assumes supply can easily co to stimulate demand may not succe increased demand.	relasticity concepts to formulate their burns look at both revenue and costs in f narket: Also, while strategizing, firms n – whether they can respond fast to th pe with any change in demand. However ssfully raise sales and revenue if supp	siness policies. not take ormulating strategies to should also take price le change in demand. It r, in reality cutting prices ly cannot cope with the	

Appendix A3: Summary Table for Government Intervention in the Market

ТАХ	SUBSIDY	PRICE CEILING	PRICE FLOOR
The government uses taxes to raise revenue and to restrict the consumption of certain goods it deems as socially undesirable (e.g. cigarettes and alcohol) to raise the price of the good and reduce the quantity exchanged in the market. A specific tax or per unit tax is a fixed amount of tax per unit of a good, <i>i.e.</i> the amount of tax is the same at all prices. E.g. 20 cents per litre of petrol (parallel SS curve shift) An ad valorem tax is calculated as a % of the sale price of a commodity. As the price increases, the amount of the tax to be paid will increase as well. E.g. 7% Goods & Services Tax (GST) (pivotal SS curve shift) The tax is perceived to add to the cost of production. As such, it will cause an upward shift of the supply curve.	The government uses such subsidies to encourage the consumption of certain goods it deems as socially desirable (e.g. education and healthcare) to reduce price and increase the quantity exchange in the market. A per unit subsidy is a fixed amount of money given to the producers for each unit they sell. It lowers the cost of producing and shifts the supply curve downwards.	The government sets a price ceiling to keep the price of a good at a level that is affordable to the majority. Examples include necessities, basic amenities and rents. This also aims to prevent exploitation by suppliers who may charge a high price in times of shortages especially during wartime. An effective price ceiling is a legally established maximum price below the market equilibrium price.	The government sets a price floor to keep the price of a good at a level that is high enough for the sellers. Examples include wages and prices of agricultural goods. Often, this intervention is on the grounds of equity, to ensure lower wage labour have a minimum wage and small-scale farmers are able to secure a price that allows them to earn sufficient income to afford a reasonable standard of living. An effective price floor is a legally established minimum price above the market equilibrium price.
 Figure 1i Frigure 1i Price P1 Q1 Q1 Q0 Q1 Q0 Q1 Q0 Q1 Q1 Q0 Q1 Q1 Q1 Q2 Q3 Q4 Q4<	 Price Figure th SSt PigeP2.S PigeP2.S<!--</td--><td> Price Figure 11 SS Price Period P</td><td> Price of labour: wage Wage Quantity Quantity of DD Quantity of Labour Referring to Figure 1f, Assume initial equilibrium price Pe., quantity exchanged is Qe in the market for labour. After the government imposes a minimum wage (i.e. price floor) Wi, a surplus of (Qs-Qd) arises. This surplus represents: (1) retrenchment of Qe – Qd units of labour and (2) Those who are in search for a job at wage Wf but are unable to find one comprise of (Qs-Qe) units of labour The change in total wages earned depends on the skill level of the workers which influences the PED of labour.</td>	 Price Figure 11 SS Price Period P	 Price of labour: wage Wage Quantity Quantity of DD Quantity of Labour Referring to Figure 1f, Assume initial equilibrium price Pe., quantity exchanged is Qe in the market for labour. After the government imposes a minimum wage (i.e. price floor) Wi, a surplus of (Qs-Qd) arises. This surplus represents: (1) retrenchment of Qe – Qd units of labour and (2) Those who are in search for a job at wage Wf but are unable to find one comprise of (Qs-Qe) units of labour The change in total wages earned depends on the skill level of the workers which influences the PED of labour.
Effectiveness to reduce quantity depends on the price elasticity of demand. E.g. Demand for cigarettes is price inelastic due to its addictive nature so a tax will raise the price significantly but Qd will only fall less than proportionate to the price rise.	Tax revenues are used to finance the subsidy, there will be a transfer of income from taxpayers to the producers and consumers. High oil subsidy could cause a strain on the government budget.	There is high possibility of the emergence of a black market, where sellers ignore the government's price restrictions and sell illegally at whatever price equates illegal demand and supply.	There is high possibility of the emergence of a black market, where buyers ignore the government's price restrictions and buy illegally at whatever price equates illegal supply and demand.



Nonetheless, the tax revenue	If all the available supply, Q _s , is sold	It exists because unemployed
collected by the government could	in the black market at the highest	workers, unable to get a job at the
be used to help smokers to quit via	possible price they can fetch, price	minimum wage, may well be
education.	in the black market will be above Pc	prepared to work for lower wages
	at Pb. Black marketers extra earning	to make some income rather than
	receipts is shown by the area	no income at all for as low as the
	P _c P _b XY.	black market wage Wb, which is
		lower than the pre-intervention
		wage of W _e .



Appendix B: Firms and Decisions / Detailed Comparison of Market Structures

	Price Taker		Price Setters	
Characteristics	Perfect Competition	Monopoly	Oligopoly	Monopolistic Competition
Number of	Many + Small	One + Big (Single seller)	Few + dominant	Many + Small
Sellers & Size of firm(s)	There are many sellers and buyers in the market that each is dealing in very small quantities relative to the whole market. <u>Note:</u> The market share of each individual firm is negligible. For example, the market for SIA shares is traded in the Singapore Exchange (SGX) by many individual buyers and sellers. It is quite impossible for any single trader to manipulate the price of the share.	One + Dig (Ongle Sener)There is only one producer who is supplying the whole market. Therefore, the market demand curve is also the firm's demand curve as the monopolist also represents the industry.For example, Public Utilities Board is the only supplier of tap water to residential households in Singapore.Note: In real life, there are not many pure monopolists (100% market share) but 'near-monopolists'. Example: In conjunction with Intel, Microsoft controls 	The few large firms account for a significant proportion of the output of the industry. Each firm has a significant market share. The market concentration ratio (MCR) is very high. <u>Note:</u> There may be many other smaller firms, which their combined total output accounts for only very small proportion of the market share. For example, the petrol industry in Singapore is dominated by Shell, ExxonMobil, Singapore Petroleum Company (SPC) and Caltex.	Large number of small firms (in the thousands) and each with insignificant market share, dealing in very small quantities relative to the whole market. For example, there are numerous blogshops (ranging in the thousands) selling apparel on the internet, hence each firm's market share is very much less than 0.1%.
Nature of Product	Homogeneous The products sold by all the firms are identical and of the same quality. They are considered as perfect substitutes by the consumers. Consumers are assured the quality is the same no matter which seller supplies this product. Consumers are not brand-conscious. For example, each individual SIA share is identical to one another. There is no difference in holding one SIA share from another.	dominant firms in an oligopoly.UniqueThere are no close substitutes for the monopolist's product and hence demand for is price-inelastic. The amount of monopoly power the firm has depends on the closeness of the substitutes produced by rival firms.SPH English newspapers such as The Straits Times, The Business Times & Chinese papers such as Wanbao and Xinmin have very few alternatives.Although there are other newspapers such as Herald and Apple Daily available, the news coverage has little on local news so they are not considered as close substitutes.	Homogenous OR differentiated. Homogenous product The products sold by the firms are identical and of the same quality. E.g. <u>crude oil</u> . The product is so highly standardized to the point that consumers are assured the quality is the same no matter which seller supplies this product. Consumers are not brand-conscious. Differentiated products For differentiated products – They are substitutes where consumers deem the goods to be alternatives to satisfy similar wants. Differentiation can be real and/or imaginary (perceived). Products may vary in terms of attributes, service, accessibility, branding and packaging. E.g. <u>petrol</u> . Though petrol itself maybe rather homogeneous, they are sold under different "iconic" brand names and together with different service, they are deemed different by consumers.	Slightly Differentiated Though similar to oligopolistic competition for differentiated product, generally, the products/services here are only slightly different. They are thus close substitutes in which consumers deem the goods to be alternatives to satisfy similar wants. This is because firms do not have high supernormal profits like the oligopoly to do prominent differentiation. Blogshops sellers can try to scout for different designs in other countries but it is easily 'copied' by other blogshops.



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	Price Taker		Price Setters	
Characteristics	Perfect Competition	Monopoly	Oligopoly	Monopolistic Competition
Barriers to Entry / Exit They refer to the various forms of restrictions or obstacles which prevent/deter new firms from entering a market to compete with incumbent firms. (Examples: extensive internal economies of scale, high start- up costs and technological know-how, legal barriers such as patents/licence) <u>Note:</u> You must be able to elaborate	No barriers to entry/exit New firms are free to enter an industry and existing firms can leave the industry without much difficulty. This leads to many firms with insignificant market shares in the industry. For example, a person can easily open a trading account with a broker and register himself with the SGX Central depository to start trading SIA shares. As a result, firms here will earn only <u>normal</u> profits in the long-run.	Very High barriers to entry/exit Firms are unable to enter freely the industry. The barriers are high enough to prevent entry of new firms so that the firm can maintain its monopoly position. The high sunk cost to start a business and a small market can result in a natural monopoly such as the TV industry in Singapore. One firm, Mediacorp is able to lower unit cost as it expands its TV programmes until it satisfy the whole market and thus more efficient to have only one firm in the industry. As a result, firms will be able to retain supernormal profits in the long run. <u>Note:</u> Without barriers to entry, other firms will start entering the industry. Examples: when the government deregulate the Telco and airline industry, other firms enter and make it oligopolistic. As technology-know- how life span is getting shorter, it's harder to monopolize the market	High barriers to entry/exit Firms are unable to enter freely the industry. The barriers are high enough to prevent entry of new firms. In the petrol industry, there are barriers such as licence to operate, to compete with strong brand names, high start-up costs to open petrol stations, storage facilities, tank trucks, etc. As a result, firms will be able to retain <u>supernormal</u> profits in the long run.	Low/No barriers to entry/exit New firms are free to enter an industry and existing firms can leave the industry without much difficulty. For example, internet business' start-up cost is minimal – setting a blog is free and the only thing is the knowledge to set up a blog. The cost of the items sold on the internet can be low, depending on the quality and quantity the owner wants to sell. As a result, the cost of exit is low too as sellers can exit without much penalty. She can simply sell the clothes to other sellers, wear the clothes herself or give away as gifts. As a result, firms here will earn only normal profits in the long-run.
Price and Output Decisions Diagrams showing profits in the long-run	FOR YOUR INFO ONLY Price/Rev/Cost (\$)	Short-run: If the firms earn supernormal profits in the till their AR is tangent to LRAC. Similarly, if they are subnormal profits, sor When AR is tangent to LRAC, i.e., TR = 0PA Long-run: At MR=MC, TR (0PbQe) > TC (0 It is able to retain the profits even in the long Note: The revenue-cost diagrams to illustra	Rev/Cost(\$) Price/ P a Q_{e} C C C C C C C C C C C C C	t I thus the demand for the existing firms will fall ill rise till AR is tangent to LRAC. mal profits . mal profits of aPbc.(Figure 1b) ts are the same for monopoly and oligopoly.

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	Price Taker	Price Setters		
Characteristics	Perfect Competition	Monopoly OI	igopoly Monopolistic Competition	
Note: All firms (regardless firms which are price has many close subs Below are 3 diagram Cambridge has giver	the market structure) are able to earn supernormal, e setters. Firms with greater market power (e.g. Mon stitutes. s that can be applied to price setting firms. For short n feedback numerous times on the inaccuracy and b	normal and subnormal profits in the <u>short run</u> . The difference is nopoly and oligopolistic firms) will have steeper demand than tho t-run profit diagrams, simply label the cost curves as AC and MC. adly explained diagram. Make sure AR and MR are not parallel.	only in the long-run and it depends on the steepness of the demand curve for se with less market power (e.g.monopolistic competitive firms) since the latter Only for long-run, you need to specify them as LRAC/LRMC. The AR is twice the slope of MR.	
Figure 1c: Su	upernormal Profit: TR–TC = 0P _e aQ _e –0CbQ _e =P _e abC	Figure 1d: Normal Profit: TR=0PebQe=TC=0ACbQe, TR-TC=0	Figure 1e: Subnormal Profit: TR–TC = 0P _e bQ _e –0ACaQ _e =P _e AC _a b	
Price/ Rev/Cos	MC AC a b AR MR O	Price/Rev/Cost(\$) AC $P_{e} = AC$ MC AC MC AR MC AR $Output$	Price/Rev/Cost(\$) AC AC P_a Q_a AC	

Some info on costs:

- Fixed costs are sunk costs that do not vary with output and are already incurred even when output is zero. Examples are costs of heavy machines and rental. When fixed costs change, only AC will shift.
- Variable costs on the other hand are costs that change with output and is zero when there is no output. Examples are costs with raw material and manual labour. When variable costs change, AC and MC will shift.

Shut-down condition (applicable in the SR)

• In SR: Shut down if P=AR < Average Variable Cost (AVC). Since total cost (TC) = total fixed cost (TFC) + total Variable Cost (TVC), fixed cost is incurred regardless. Hence if price is not sufficient to even cover variable costs, the loss will be even greater if the firm continues production. This is considered a temporary suspension of production and will return to business when the situation becomes better.

In the LR, if the firm makes subnormal profit, (AR<AC) it will shut-down permanently and leave the industry. When a firm exits the market, it basically winds up all operations and the capital resources get freed up for use in another venture.



	Price Taker		Price Setters		
Characteristics	Perfect Competition	Monopoly	Oligopoly Monopolistic Competition		
Knowledge of Market Conditions	Perfect The large number of buyers and sellers has perfect knowledge of market conditions and the price. Consumers have all the information about the products and prices. In the market, firms are aware of the best production methods used by other firms. This leads to easy entry and also homogeneous product .	Imperfect A firm which sells high technological know-how that is not easily available, and its product is protected by law through intelligent property right protect its monopolistic position. This advantage gives the monopolist the incentive to innovate. Firms with substantial market power such as oligopolies can withhold information from the consumers and even rivals. This advantage also give firms the incentive to innovate. Firms with less market power (i.e. monopolistic competitive firms) due to the numerous numbers of firms in the market have imperfect knowled these firms are probably separated by location and it is difficult for consumers to know what other shops are selling and the prices they charged. Dimension from the consumers to know what other shops are selling and the prices they charged.			
Price and Non-price strategies	Every PC firm is a price taker as it is unable to influence the price. It has to accept whatever the market price is. The market price is set by the interaction of the market demand and supply curves.	Price setting firms have varying degree differentiation in their products/ service These firms can either control price or <i>is decided, the price will depend on de</i>	ee of market power over their products/services due to the es. output but NOT BOTH . Once a price is set, the quantity will to mand.	lack of competition available and/or the degree of be dependent on demand. Similarly once a quantity	
	 The firm can sell as much as it wants without affecting the market price as its output is a negligible proportion of the market supply. For example, the information about SIA share prices is available through the internet in real time and other mass media. SIA also publish annual report on the financial health of the company. So the trader will not increase the price as he will lose all his clients. Neither does he have the incentive to lower price. There is also no need to innovate as new information will be readily available to other producers and thus result in homogeneous goods. Since products are homogeneous and information is perfect, buyers would be indifferent to the sources of the product and there is no product differentiation and no need for advertising by the firms. Firms only have to ensure their price is the same as others and their revenue can cover their variable costs to stay in business in the shortrun. 	NON-PRICE STRATEGIES Internal Expansion: The aim of the firm is gain greater market share and hence market power by an increase in sales. This is done by incr the scale of production. However, this requires financing investment to support production capacity which may be a challenge to the firm. Al outcome may be uncertain depending on the success rate of the firm's ability to increase sales. Mergers & Acquisitions (M&A): A merger refer to the voluntary amalgamation of two or more firms into a single business entity, will acquisition refers to the takeover of existing businesses through buying over the shares from their owners. The benefit of such strategie increase firm's production capacity and market share while promoting cost rationalisation. However, such firms need to consider the finances re to support this strategy (debt burden) and excessive growth may result in intenal diseconomies of scale. Nonetheless, one clear benefit for a hor integration would be the reduction in the number of existing competitors. Diversification: This strategy is typically used when the growth of the current product is slow or stagnating. The aim is for the frim to tap or sources of revenue and to cut losses via spreading its risks since the profits earned from the sale of one product can be used to support another p which may be incuring a loss. Nonetheless, possible significant risk entering a new market means this strategy should be used with caution. Innovation: The aim of the firm is to raise entry and exit barriers of potential entrants so as the market less contestable. In this we existing firm will earn potnetially higher profits in the long run.		by an increase in sales. This is done by increasing ty which may be a challenge to the firm. Also the more firms into a single business entity, while an their owners. The benefit of such strategies is to , such firms need to consider the finances required cale. Nonetheless, one clear benefit for a horizontal or stagnating. The aim is for the frim to tap on new one product can be used to support another product his strategy should be used with caution. make the market less contestable. In this way, the n demand and can sell well and is different from the ce inelastic, less substitutable, so as to earn more is and credit facilities to draw customers. uper options such as improving product packaging.	



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	rising but not prices: <u>Only PC firms are</u> price takers.	 Cooperation or Collusion with a The strategies for oligopolistic firms There are situations where firms or development costs are high as a pr One common example is an airling cooperate on a substantial level. Of facilities (e.g. catering or computer benefit from lower prices due to low Cartel Theory (Explicit Collusion) The centralised cartel which acts like sets the monopoly price for the allocates the output or quota a However, a key drawback for a sus profits. Alternatively, individual merr quota or cutting price is that this worthe cartel well break up in disarray. Tacit Collusion Collusion is tacit where the behavior the pricing policy of a recognised I substantial rise in costs. E.g. Comfare hike, citing a rise in crude oil p various firms occurred within days a PRICE STRATEGIES Limit Pricing: This is an entry determing the market by setting a price just low of In this way an artificial barrier to entry sacrifice some short-term profits by proutput (this increases its market share Total profit is lower - shown by P₂BFC the estimated average cost of the potential firms in the market sell at the sammay face the risk of big losses if it ent 	bligopolistic firms: are influenced by their <u>mutual Interdepe</u> opperate in the form of strategic alliances of oportion of total costs and where the pace e alliance in the aviation industry in which ne main benefit to the airlines is cost redu- systems) and operational staff (e.g. groun vered operational costs for a given route. A sea monopoly, makes the following decision e commodity. The members which is usually account tained cartel is the tendency for members on the members which is usually account tained cartel is the tendency for members on the retaliation from the other members of each firm is the result of an unwritter eader which is usually the dominant firm ortDelgro- the dominant taxi company in St rice, and the rest will follow suit. In the per- after one raised its price. This new low price P_2 is below ential rival firm, and assuming the price, then the potential rival firm ers the market.	endence (i.e. action or joint ventures. C e of technical chang th arrangement was uction from sharing d handling personn ons: rding to their marke within the cartel to cartel's price to inc bers of the cartel, w n rather than forma with the largest ma ingapore of almost trol industry, it is be Price/Revenue/Cost (\$) P1 P2 0	hs/reactions of rivals) Due key area of cooperation is where research and e is very rapid. Is made between two or more airlines agreeing to of sales offices, maintenance facilities, operational tel, at check-in and boarding desks). Travelers also It share. cheat on agreed production quotas to earn more crease profits. The danger with either selling above rith a resulting price war . Price would then fall, and I agreement. They could do this tacitly by following arket share. Usually, price will change if there is a 60% market share is always the one that initiates a sing observed that the revision of prices among the Figure 1f Figure 1f Home G G G G G G G G

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		responding with price cuts which could out of the industry so that the remaining profits by cutting the price, to increase Price Rigidity: Firms aim to refrain price but will not match any increase in the current market price, PE, it will fin substitute in ExxonMobil & Shell. Hen quantity demanded, and thus a fall in t By the same argument, as rival firms output. That is, SPC would experience Therefore, SPC is reluctant to lower its Price Discrimination: It is the pra costs, to get more revenue and thus p so that consumers who are charged th must be able to keep the market in se degree price discrimination, there show Shut-down Decision: This takes p Shut-down condition (applicable in In SR: Shut down if P=AR < Average N if price is not sufficient to even cover v AVC. This is considered a temporary s In the LR, if the firm makes subnor	d worsen to a price war where firms may undercut each othe g firms may have a larger market share. Where the firms are h market share. Profits from some of its other or past activitie from price competition based on the kinked demand theory in price. Assuming rival petrol firms do not match price increase d its quantity sold fall more than proportionately as most of ce, if SPC increase the price above PE, it would experience otal revenue. Therefore, SPC is reluctant to raise its price. are assumed to match any price reduction, SPC when low e only an insignificant or less than proportionate increase in o s price. ctice of charging different prices for the same product to differ orofits. A producer wishing to practise price discrimination ef e higher price find it difficult to turn to an alternative supplier parate and identifiable groups to ensure that there will be no uld be different price elasticities of demand in different market lace when a firm makes a loss with the aim of minimising the the SR) /ariable Cost (AVC). This is because, total cost (TC) = total fi- rariable costs, fixed costs are also not covered. Hence loss w suspension of production and will return to business when the mal profit, (AR <ac) and="" down="" it="" le<br="" permanently="" shut="" will="">he capital resources get freed up for use in another venture.</ac)>	r's prices with the aim of driving some of their rivals highly diversified, a firm may be prepared to sacrifice s may be used to cover the short-term losses. where firms will follow suit when any one firm cuts ses, if say SPC raises its price independently above the customers will switch to the relatively cheaper a substantial or more than proportionate fall in the ers its price will not sell proportionately more of its quantity demanded, and thus a fall in total revenue. Frent groups of consumers, not due to differences in ffectively should have a degree of monopoly power who might offer lower prices. Besides, the producer seepage between markets, i.e. no resale. With 3rd its.	
Allocative Efficiency	Allocative Efficient (P = MC) Figure 1g	Allocative Inefficient (P > MC) due to downward sloping demand curve. With market power, profit maximising firms may choose to restrict output and charge a higher price than under perfect competition. Thus, price is			
It is defined as the allocation of resources to produce the combination of		greater than marginal cost and this lea	ds to allocative inefficiency. (Figure 1h, where price charged Figure 1h	I, P_E is higher than its MC, C_{MC} at Q_E)	



HWA CHONG INSTITUTION Year Two H2 Economics 2024 Summary Tables: Firms and Decisions

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Characteristics	Perfect Competition	Monopoly	Oligopoly	Monopolistic Competition
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goods and services most wanted by the society. It is achieved when Price equals Marginal Cost (P = MC).	 Price/Rev Cost [8] The price of a good generally reflects the value the consumers place on the good. Strictly speaking, price is the amount of money the people are willing to pay for the last unit consumed, reflecting their marginal benefit. Marginal Cost measures the opportunity cost of using the resources in their next best alternative use. When <u>Price > Marginal Cost</u>, At output OQ1: the consumer values the additional unit of good more than the resources required to produce it, so there will be a net gain in welfare if the additional unit is produced. When <u>Price < Marginal Cost</u>, At output OQ2: the value that the consumer places on the additional unit of good is worth less than the opportunity cost of producing it. 	 With reference to Figure 1h, at profit is P_EC_{AC}YX. However, at Q_E the price is larg produced than what it costs the Q_E is less than the allocative eff Hence there is underproductio For the amount of goods Q_EQ_{AE} benefits foregone outweigh cos Question: What is the area W Note: The stronger the market domina between P and MC and bigger the work resource allocation. In other words, allowed the strength of the stronger of t	ice/Revenue/Cost (\$) P_{E} P_{Cac} Q_{C} Q_{C} Q_{C} Q_{C} Q_{E	GHLY MENDED: ar Code below ter is allocative fficient. fficient. ficient. ficient. fficiency in fficiency in ffic



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	 in other words, society will be better off if the additional unit is not produced, & if the resources are diverted to produce some other commodity which can fetch a higher price (reflecting a higher value). <u>At output OQe</u>: when marginal cost equals marginal benefit (price), the last unit produced is valued as much as any other good that could have been produced using the same resources. once P = MC, it is not possible to improve the situation by reallocating resources. Note: The use of diagram to analyse perfect competition is for your reference only. It is additional knowledge for students who want to have a more in-depth understanding. 				



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Productive Efficiency It is defined as the production of goods and services at the lowest possible average costs of production. X-inefficiency occurs when a firm produces ABOVE the long-run average cost at any given output level. i.e. as long as a firm produces on the LRAC for any output level, it is NOT X- inefficient.	 Productive Efficient Under perfect competition, competition forces firms to produce at the lowest cost per unit of output in order to stay in the industry. Firms produce at the optimum capacity and there is no wasteful excess capacity. Referring to Figure 1a, a perfect competitive firm produces at the minimum point of the LRAC where all the internal economies of scale are exhausted and thus there is productive efficiency. That is, for any given technology, the firm, in the long-run, will produce at the least-cost output. 	 X-Inefficient Given that large dominating firms face no it might be complacent and suffer from it Without competitive pressures on profit equipment, as well as less effort to keep export markets. Thus, the more comfortable the situation not producing along the LRAC but above However, if the market is contestable that competition in the future. 	competitors/rivals , it is questionable whether it will I hefficiency due to the lack of competition. This form o margins, cost controls may become lax. The result i technology up to date, scrapping old plant, research the less may be the effort which is expended to implit. It is there is threat of potential entrance, the firm wi	have the incentive to minimise costs. In other words, finefficiency is termed X-inefficiency . may be overstaffing and spending on buildings and sing new products, or developing new domestic and rove it. The effect of this X-inefficiency is the firm is I have more incentive to be cost efficient to withstand
Dynamic efficiency (Innovation)	No incentive and no ability to do R&D No Incentive: Homogeneous products: this makes innovation to improve the quality of product an irrelevant point here. (no effect on revenue curves) Perfect information: innovations are quickly replicated by rival firms or attract new firms. This discourages R&D since the innovating firm will not be able to reap the fruits of its innovations. (no differentiating effect on costs) No \$\$:	No incentive but have the means to do R&D No Incentive: Assuming there are complete barriers to entry, the dominan position of the monopolist is secured and thus there is no need for the firm to do R&D Innovation may erode the value of a monopoly's existing products and thus i may prefer to stay status quo. For example the discovery of a cheaper and faster microprocessor will lower the price of all its existing microprocessor.	 Have both incentive and ability to innovate. Have Incentive: In competitive oligopolies, there is price rigidity and price war will probably lead to a possible lose-lose situation. Thus, to attract consumers, product differentiation in terms of better-quality products and services will be the key factors. Have \$\$: Oligopolies like monopolists are able to retain supernormal profits in the long-run and thus have the means to finance expensive R&D work. 	 Have incentive but no ability. Have incentive: The monopolistic competitive firms have incentive to innovate as they can differentiate their products and earn supernormal profits in the short run. There is imperfect information so the improvement they made would not be easily made known to other producers. No \$\$: Despite their efforts, they only earn normal profits in the long run so the ability to innovate is limited by the available funds. <u>Note:</u> As a result, the type of innovation is mainly simple product differentiation that requires a lower



	Earn normal profits in the long run: R&D expenditures are very high and at time enormous. Without the supernormal profits, firms will not be able to invest in purchasing expensive equipment or hiring professional to do R&D. <u>Note:</u> NONETHELESS, it must be noted that in reality, a highly competitive market (not the theoretical perfect competition) does drive innovation as it makes the firms want to improve the quality of their products (revenue impact) or reduce the cost of production (cost impact) to earn higher profits.	Have \$\$: The monopolist has the ability to do R&D as it retains supernormal profits in the long-run, and this allows it to fund expensive projects. <u>Note:</u> NONETHELESS, if the market is contestable – barriers to entry are lowering, then the monopolist will innovate to secure its position. It can innovate in terms of production processes/machines that reduce costs to enable the monopolist to charge a low price to deter other firms which cannot match the low price from joining; or to come up with better quality goods (revenue side) to harness loyalty from consumers and this will serve as a barrier to entry to potential competitors. If the monopoly has sold the goods to most of its potential buyers, it needs to come up with better products to sell to the existing consumers and at the same time attracts new consumers. For example, Apple introduced iPhone 6, 7, 8, X, 11 & 12 and iPad 1, 2 and 3 within a few years making existing consumers to buy its products. All these add on more revenue and thus profits	Note: HOWEVER, pace of innovation can be slow in collusive oligopolies especially when there is a lack of competition from potential entrants. Also, the differentiation is more imaginary if the focus is mainly persuasive advertisement.	cost rather than groundbreaking innovation that involve high outlay.
Choices (variety and firms)	 Firms produce undifferentiated products. This lack of variety might be seen as a disadvantage to the consumers. Note: However, consumers do have a choice of many producers. Besides, the consumers gain from low prices, since not only are costs kept low, but the price charged is one that only allows earning of normal profits in the long run. If consumers' tastes change, the resulting price change will lead firms to respond. As a result, perfect competition is said to lead to consumer sovereignty. Consumers through the market, determine what and how much to be produced. Firms have no power to manipulate the market. 	 Consumers do not have a choice given that the monopolist's good is unique and there is no similar product in the market. Consumers also do not have a choice of which producer they buy from since there is only one firm (especially true in a natural monopoly). As a result, consumer sovereignty is restricted and consumer surplus is appropriated by the monopolist. Note: In reality, even when a firm is a monopoly, it doesn't mean there is only 1 single seller but probably it has a substantial market share. Also, if the market becomes more contestable, barriers to entry are lowered, there will be other firms selling similar products. 	Consumers have a variety of products to choose from and also a pool of producers to buy from. BUT oligopolies spend a significant amount in terms of branding and advertising and these give an illusion to consumers they have a wider choice and actual fact the products may be similar. Note: Given that most oligopolistic firms engage in non-price competition, there is a high chance that there are improvements in innovation and consumer choice. However, if the non-price competition is centered on persuasive advertising, innovation and consumer choice may not improve. It may even worsen consumer choice if consumers are swayed into buying goods and services that add less marginal benefit to them than what the consumers perceive. (In other words, Perceived marginal private benefit > Actual marginal private benefit). Hence it is questionable if oligopolistic firms would improve innovation and consumer choice.	Consumers have a variety of goods and services and a large number of firms to choose from. Note: However, this is probably at the expense of excess capacity since there are so many firms with each producing a small quantity and not producing at the socially ideal output. It implies that the firms are inefficient in using both its own resources as well as society's scarce resources.

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	cannot control price. The only thing they can do to increase profits is to become more efficient and that benefits consumers.	 Besides, the promise of supernormal profits and protection by intellectual property rights may encourage the development of new products. A big near-monopoly firm like Apple Inc can produce a wide range of products to cater to different tastes and preferences. 			
Equity	Perfectly competitive markets tend to spread opportunities and wealth widely as there is free entry in which firms can enter and compete for the supernormal profits easily. Profits are spread amongst many small firms till everyone earns only normal profits in the long run. Also, prices are perfectly competitive and consumer surplus will be retained by the consumers and not exploited by the firms. Note: HOWEVER , perfect competition does not rectify pre-existing income inequality.	The presence of monopolies or oligopolies supernormal profits are at the expense of co and concentrated in the hands of one or a few HOWEVER , the government can intervene by redistribute the income to the households in t as healthcare and education. Note: While governments can tax the firms income groups, it is unlikely that governments investment or reduces the incentive for the development to improve their goods or servin government intervenes.	exacerbates inequity in the economy as the nsumers paying high prices for limited quantities / large firms. y having corporate/profit taxes on such firms and the forms of subsidized goods and services such to redistribute some of their profits to the lower- s would impose a very heavy tax that discourages a oligopolistic firms to engage in research and ces. Thus, inequity is likely to persist even if the	Monopolistic competitive markets tend to spread opportunities and wealth widely as there is free entry in which firms can enter and compete for the supernormal profits easily. Profits are spread amongst many small firms till everyone earns only normal profits in the long run. <u>Note:</u> HOWEVER, monopolistic competition does not rectify pre-existing income inequality.	
	However, in a marke	However, in a market economy, distribution of goods is still based on ability i.e. only those with purchasing power will be able to consume the goods.			
Other examples	The closest examples other than shares and stocks will be primary commodities.	Private Monopoly Microsoft dominates the market with its <u>home computer operating</u> <u>system, MS-DOS</u> and the <u>office suite</u> market with <u>Microsoft Office</u> . Note: The market has become more contestable in recent years as Apple Macbook gains more popularity and many other free OS and softwares available on the internet.	 Telecommunication Companies Few large firms relative to market size (Market Concentration Ratio of 3 firms of SingTel, Starhub and M1 is 100%) Significant barriers to entry (e.g. satellites, government license, etc) Note: Nowadays, to make pricing 'ambiguous' to the customers, the companies have been trying to bundle services together. Offers such as a 'promotional package' of mobile phone line with landline, internet and pay-TV services are bundled and charge a seemingly attractive pricing. 	Dining at hawker centre is part of the Singapore culture. There are hawker stalls such as chicken rice stalls located in hawker centres spread across Singapore. Each of these stalls has only an insignificant market share. Barriers to entry relatively low (e.g. inexpensive to rent a stall space, buy cooking equipment; usually small family business). Product (Services) tend to be slightly differentiated (e.g. in location, different styles of cooking; service etc).	
Advantages	 Allocative Efficient Productive Efficient Equitable Income distribution since only normal profits are earned in the long-run 	 Substantial internal economies of scale may lead to higher output and lower price than a perfect competitive firm. R&D that improve the quality of goods due to the supernormal profits in the long run. Price discrimination allows poor to gain access to goods/services 	 Substantial internal economies of scale may lead to higher output and lower price than a perfect competitive firm. R&D due to both incentive and supernormal profits in the long run Product differentiation enhance variety and choice 	 Product differentiation enhance variety and choice. Equitable Income distribution since only normal profits are earned 	
	Homogenous goods: lacks in variety	Allocative inefficient	Allocative Inefficient	Allocative Inefficient	

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	-					
	No Internal Economies of Scale	X-Inefficient	Excessive advertising leading to wastage	Excess capacity		
Disadvantages	No dynamic efficiency	Price discrimination resulted in loss of	of resources.	No Internal Economies of Scale		
Disauvaillages		consumer surplus	Collusive oligopoly may exploit consumers	Minimal R&D		
			by restricting output to roise prices (E.g.			
		supernormal profits are earned -	OPEC cartel)			
		transfer of consumers' income to	Worsens income inequality since			
		producers.	supernormal profits are earned – transfer of			
			consumers' income to producers			
Firms may						
i iinio iiiay	Throughout the topic of market structu	urea, we have accumed that the aim of a fi	rm is to movimize profite. This means that the	firm would produce where MC – MP. In reality		
not and do	$r_{\rm moughout}$ the topic of market structures, we have assumed that the aim of a minist to maximise profits. This means that the mini would produce where MC = MR. In reality,					
not want to	there are two main criticisms of this tra	aditional profit-maximising theory:				
movimico	(a) Firms may not be able to maxir	nise profit due to lack of information and	technical knowledge; organisational slack (X-i	inefficiency); and government intervention such		
maximise	as price ceiling	•	3 <i>7</i> 3 (577 6		
profits	(b) Firme may not want to mayimiz	ne profit . Come of the alternative chiestive	a are to maximize growth or increased marked	t abara		
(Alternative	(b) Firms may not want to maximis	se profit; Some of the alternative objective	is are to maximise growth or increased market	t share.		
Theories)						

Why oligopoly is a common market structure.

Majority of the economic activities are dominated by manufacturing, transport and communications, financial and construction services. These industries are characterized by quite significant barriers to entry. As market becomes more contestable, oligopoly becomes a more common market structure.

(1) Market becomes more contestable (Monopoly turns oligopoly)

- Over the years, many markets have become more contestable, i.e. for a contestable market to exist there must be low barriers to entry and exit so that there is always the potential for new suppliers to come into a market to provide fresh competition to existing suppliers.
- As a result, there is a high possibility of a monopoly turning into an oligopoly when barriers to entry are removed or weaken e.g. government's initiative/deregulation Singapore's telecommunication industry), patent lapses and new firms enter, etc.
- Also, with globalization, international pressure on governments to remove trade barriers has increased competition for domestic firms in the domestic economy.

(2) High Barriers to entry (Dominant firms remain big)

- Although barriers to entry get eroded, they do not get eroded to the extent that it allows the entry of many new firms. The barriers to entry still remain substantial.
- Barriers to entry are commonly found in many industries, ranging from large start-up cost and technological know-how, especially pharmaceutical and manufacturing industries; internal economies of scale to brand proliferation to limited market size, few large firms possess strong brand names and able to enjoy large customer base over the years.
- E.g. There are only three telecommunication companies in Singapore due high set up costs (satellites) and government license.

(3) Mergers & Acquisitions and Internal Expansion (Medium firms grow to reap the cost and revenue benefits for big firms)

COST ADVANTAGES (cost savings via internal economies of scale and rationalization)

- Internal economies of scale are cost savings accrued to a firm, i.e. a fall in unit costs when it increases its scale of production.
- Technical (plant) economies of scale: For example, in a car industry, technological advancement has made possible the automation of many production processes causing substantial technical economies of scale as it increases specialisation of labour and capital, sharing of expertise and resources in R&D.
- Non-technical economies of scale: Bigger car manufacturers also enjoy marketing economies through bulk purchase of raw materials such as steel and intermediate goods like tires with discounts; Administrative & Managerial Economies: Generally, administrative costs will not rise in proportion to the size of an order. For instance, after the car manufacturers merged, one human resource manager can oversee more staff and thus unit cost falls; the merged firm can also enjoy more financial economies when they get loans from banks as with bigger collateral, banks are willing to loan them with lower interest rates.
- All these cost advantages make the firm more competitive in both the domestic and foreign markets as they will now be able to charge lower prices.



Note:

- It is common for students to leave out critical words in the definition 'unit costs and scale of production'.
- Also, many students only give examples instead of linking to the correct type of internal economies of scale.

Further cost savings can be reaped through rationalisation: the reorganising of production so as to cut waste and duplication and generally to reduce costs.



REVENUE ADVANTAGES

Large companies which control a significant market share are able to reap revenue advantages. This means that a large firm is able to generate more revenue because it can charge a higher price or to sell a larger quantity or both, compared to a small firm.

- A large firm earns supernormal profits (due to barriers to entry) and thus have the avenue to do R&D and will be able to improve the quality of its product or services and thus compete better in the international front.
- A large firm is able to set aside a bigger budget for advertising. A successful advertising campaign establishes a strong brand name, increases product awareness and fosters consumer loyalty thereby increasing demand even more.





CONCLUSION: Indeed oligopoly is a common market structure in many economies because some forms of barriers to entry are removed and monopolies are getting rare and also industries that once dominated by small players have become more oligopolistic as firms want to have more cost savings and earn higher revenue and ultimately more profit. As such, the rewards of getting bigger are growing, particularly in the world of technology, telecommunications and media where fixed costs are high and the additional costs of serving an additional customer is low. And this is aided by the growing number of mergers & acquisitions approved by authorities.

Why Monopolistic Competition is a common market structure.

- Majority of the economic activities by small and medium enterprises (SMEs) are considered as monopolistic competitive. These industries are characterized by low barriers to entry. They are normally in the services industry or in light manufacturing with low start-up costs.
- New industries usually seek to differentiate themselves by introducing new goods or services to the market. For example, the bubble tea craze in 2001 started when entrepreneurs brought in the drink from Taiwan. With the supernormal profit seen in the market, subsequent firms tried to introduce different tasting flavours in attempt to earn supernormal profit. This is also the case for other 'fads' such as louhan fish, roti bun, and donuts.
- The existence of supernormal profits in the short run and low barriers to entry would attract more firms to enter the market. The low opportunity costs (e.g. low initial start-up capital) would also mean that many ambitious young entrepreneurs would 'try to luck' at making potentially huge profits.
- BUT, many small firms are growing bigger in order to reap internal economies of scale and gain revenue advantages. Thus, it is getting more common to have dominant firms in traditionally monopolistic competitive industries.



Appendix C: Summary Table on Market Failure & Government Intervention

- Market failure is said to occur when free markets, operating without any government intervention, fail to allocate scarce resources efficiently, in a way that maximises society's welfare.
- Government failure refers to situations where government intervention results in greater market inefficiencies than would otherwise occur without government intervention.

Reasons for Govt. intervention	Causes	Diagram	Government Intervention	Effectiveness/Implications
Non-provision	Non-excludability: it is impossible or prohibit	ively expensive to prevent non-payers from	Direct Provision	Government failure in the form of
of Public Goods (by free	using it. E.g., once street lighting is provided, restrict the availability of the service to people	there is no inexpensive or practical way to who don't pay	Profit-maximization is not the government's goal the	lack of information and possibility of giving in to electoral
market)		who don't pay.	government considers the full	pressures, leading to over-
	Non-rivalry: consumption of the good by addi	tional individuals will not reduce the quantity	social costs and benefits	spending and hence production
<u>Note:</u> Must	and quality consumed by existing consumers.	For instance, the use of the street lighting by	generated by public goods.	of output (greater than socially
consumption of	a pedestrian win not reduce the amount of ligh		They can produce the goods or	equilibrium levely i.e. > Qs.
private goods	*Non-rejectability of a public good once it i	s supplied: consumers are not in a position	services themselves or outsource	Strain on government budget -
is excludable &	to reject public goods and are forced to consul	me them.	to a private company to do it.	high opportunity cost
nvanous.	characteristic only where relevant.	when describing the market failure. Use the S	the full cost of production.	
	Implications of characteristics on market n	rovision		
	Free-rider problem Since anyone can enjoy	all the benefits of a public good once it is		
	produced without paying for it, no rational cor	nsumer motivated by self-interest will reveal		
	his effective demand.			
	No price-signals – zero production; no res	source will be channelled to produce these		
	benefits to society.	en mough a pure public good yields valuable		
	E.g.: flood control dam, national defence, stree	et lighting		



Externalities The Marginal Private Cost (MPC) / Marginal Private Benefit (MPB) of production / consumption measures the cost / benefit to the producers / consumers from the last unit sold / bought. The price mechanism fails to bring about a socially efficient allocation of	_	Negative externalities are costs from production or consumption experienced by society but not by the producers or consumers themselves and are not accounted for by the price mechanism. MSC>MPC as MEC>0 & MSC=MPC+MEC, MPB =MSB (MEB=0) Equilibrium MPB=MPC at Q _m & socially optimum is MSB=MSC at Q _S E.g. Air & water pollution as result of factory production-chemical waste; congestion E.g. Cigarettes - Smoking, driving cars - must know Singapore's context. For the above egs, there is also possibility of imperfect information in some cases	Price MSC = MPC + MEC MPC + tax MPC + tax Pn Pn Pn Pn Pn Pn Pn Pn Pn Pn	Set Taxes = MEC at Qs Shifts MPC to MPC + tax & MEC is internalised & market continues to operate; amount can be adjusted in response to the magnitude of the problem; forces firms to work out cleaner ways of producing goods to reduce amount of tax. Marketable permits (only for production) Regulations: fines, quota, install devices to reduce pollution / negative externalities Ban	Government failure in the form of lack of information – unable to measure MEC accurately – over or under-correct; unfeasible to have different tax rates. Issued too little/much permits? High admin and enforcement cost Blunt instrument, loopholes, compliance, and enforcement problem More welfare loss?
because the external cost / benefit to third parties created is unpriced by the price mechanism	+	Positive externalities are benefits from production or consumption experienced by third parties but not by producers or consumer themselves and not accounted for by the price mechanism. MSB>MPB as MEB>0 & MSB=MPB+MEB, MPC=MSC (MEC=0) Equilibrium MPB=MPC at Q _m & socially optimum is MSB=MSC at Q _S E.g. ↑Productivity due to better health, well- informed voters & ↑graciousness due to education E.g. Healthcare-vaccines, years of education – must know Singapore's context. For the above egs, there may be the possibility of imperfect information and inequity.	Price Part	 Direct provision; can be free (full subsidy) or with the price partially offset with some subsidy. A subsidy equivalent to MEB at Qs will shift MPC to MPC-subsidy and thus achieving socially optimum level of output. Government can produce the goods or services themselves or outsource to a private company to do it Regulations: make vaccination against some diseases or primary school education compulsory Long term solution? R&D for clean water 	 Government failure in the form of lack of information – unable to measure MEB accurately – over or under-correct Strain on government budget – opportunity cost. Consider co- payment? Inefficiency & complacency for firms



Information Failure (Imperfect Information)	Conflict between consumer & producer interests; incorrect information; ignorance; low frequency of consumption leading to a lack of experience; complex products that are difficult for the typical consumer to evaluate knowledgeably Note: Certain goods with more than 1 market failure (e.g. both externalities and imperfect information) provided added reason for government intervention.	Price Pr	Regulations: make correct & more information available & to protect the ignorant Educate people & create awareness. To close the divergence between perceived and actual benefit curves.	Consumers or producers will always try to beat the system. Long drawn process that involves changing mindsets
Asymmetric Information (Subset of imperfect information)	Asymmetric information arises when the producers) involved in the transaction do not had in a distortion of incentives and inefficient mare. Adverse selection occurs when a good is methe more informed party that would harm the use Moral hazard exists when one party has moral made a transaction, the more informed party the costs are borne by another party.	e economic agents (e.g. consumers and ave the same amount of knowledge, resulting ket outcomes. ainly bought or sold by a certain segment of uninformed party. re information than the other and once they changes his behavior in order to benefit as	Mandatory or universal coverageLaws to prevent opportunism.E.g. Anti-lemon lawEqualising information.E.g. screening by uninformed,signalling by informed &monitoring	Can be a strain on govt. finances or overprovision Legal & time cost of taking errant sellers to court Additional cost needed to acquire info. & the reliability of such info. Administrative and time cost of monitoring
Immobility of factors of production	Labour Immobility: Occupational (structural	unemployment) & Geographical Immobility	Training & education, build infrastructure Subsidise R&D	Long gestation, 3As (age, attitude, aptitude) Strain on government budget



	Capital Immobility: Immobility of factors of resources cannot respond to market incentive by consumers (<qs) <u="" or="">disincentives to stop of The greater the immobility of factors, the more efficient allocation of resources.</qs)>	production contributes to market failure as to produce goods and services demanded or cut production (>Qs). e difficult it is for markets to achieve socially		
Market Dominance	Big firms with pricing power P>MC and the gap can be huge as demand is high and price-inelastic. Since P > MC, this means the consumers place a higher value on additional units of the good produced than what it costs the firm to produce it. It is still possible to allocate resources in such a manner as to make someone (the consumer) better off without making someone else (the firm) worse off. If the market is not contestable, with little threat of competition in a monopoly or the oligopolies collude instead of competing, they may experience X-inefficiency, resulting in using outdated technology and incur unnecessary costs – no dynamic and productive efficiency. These will in turn lead to more allocative inefficiency as firms will just raise price to cover higher cost, producing less than Q _{AE} .	Price/Revenue/Cost (\$) PE PAE CAC CMC CMC CMC CMC CMC CMC CMC	Price control (e.g. MC-pricing, P _{MC} to achieve AE) Regulation: punish firms that collude Deregulation to inject competition to keep price low (reduce the gap between P & MC.)	 ↓profits → ↓R&D AC-pricing may lead to production beyond Q_{SE}. Enforcement problem Too much competition ↓profits – firms shut down, less able to innovate and do R&D Firms unable to reap as much internal EOS resulting in unit cost to increase instead
Income Inequality <u>Note:</u> Not the usual market failure as it is about lack of	 In a market economy, the ability of individual and wealth of the household. The market system will not respond to the economic (dollar) votes to have any impact a market-based system is <u>effective deman</u> and services. 	s to consumer goods depends on the income e needs and wants of those with insufficient on market demand because what matters in nd (willingness and ability to pay) for goods	 (A) Taxation (i) Progressive tax system (redistribute the income by subsidising the poor) (ii) Tax on luxury goods 	Reduce incentive to work & invest



distributive efficiency rather than lack of allocative efficiency.	• Consequently, essential goods and services do not necessarily flow to those who need them the most, there is no distributive efficiency , where distributive efficiency occurs when goods and services are received by those who have the greatest need for them. Need is defined as the minimum which is necessary for a person to survive as a human being, but of course what is minimum is debatable, one that requires value judgment.	(B) Subsidies e.g. In Singapore, subsidies are given to lower income group in the form of medical subsidies (Means testing is used).	
		(C) Minimum wage	Results in unemployment Should use training & education to ↑productivity & ↑demand for unskilled labour leading to ↑W.

For questions on policies to correct externalities, the general approach is as follows:

1. Introduction

- 2. Start with a **market-based solution** such as taxes for negative externality and subsidies for positive externality. Explain using a diagram.
- 3. Next will be non-market based solution: regulation/legislation
- 4. Suggest a long-term solution e.g. better substitutes make possible by investing in new technology; provide information to enable rational decision-making. Such solutions usually take time to bear fruit.
- 5. Synthesis and conclusion

GENERAL CRITICISM FOR MARKET-BASED SOLUTIONS AND REGULATIONS

MARKET-BASED SOLUTIONS – Tax & Subsidy	NON-MARKET-BASED SOLUTIONS – REGULATIONS
• LACK OF KNOWLEDGE: Government failure in terms of lack of information to measure external costs/benefits accurately which result in over/under tax/subsidise.	• COMPLIANCE: Government failure in terms of getting people to comply with the law. Government intervention can prove costly to administer and enforce. The administrative costs of administering and enforcing a particular policy to correct market failure may outweigh the social benefits from the correction.
• NOT FEASIBLE TO USE DIFFERENT TAXES/SUBSIDIES: It is difficult to have different taxes/subsidies for different scenarios.	• LOOPHOLES: Consumers or producers will always try to beat the system. E.g. those who are 20 years old and below (from 1 Jan 2020) are not allowed to smoke but these under-aged smokers can always request their older friends to purchase cigarettes for them.
A one-size fits all rate is not ideal.	• BLUNT INSTRUMENT: it affects those who are not within the targeted group. E.g. the rule to ban free bus services to go to the integrated resorts not only hit the gamblers but also those genuine shoppers.

<u>Note:</u> Usually for certain goods and services, there is the presence of multiple sources of market failure such as externalities and imperfect information. For example, in healthcare, there are positive externalities and imperfect information (patients' ignorance).



Appendix D: Key Economic Indicators, SOL & Circular flow of Income

ECONOMIC INDICATORS AND STANDARD OF LIVING

Economic Indicators	Indicators explained
Nominal GDP (S\$ millions)	<u>Nominal</u> GDP refers to GDP at current prices. This means that effects of price changes have not been removed. This is not the indicator to use for comparison purposes.
Real GDP (S\$ millions)	<u>Real</u> GDP refers to GDP at constant prices. This means that the effects of price changes have been removed. It measures the national income in terms of physical quantities of goods and services. For example, if the real GDP has a base year of 2010, it means the value of the GDP is calculated with reference to the price level in 2010.
Population Growth (%)	The rate of change of population. If the population grows faster than real national income, the individual's share of real national income will be falling.
Real GDP (% Change)	This indicator measures the economic growth. As long as the growth is positive, GDP is rising. Fall in % change of GDP just means GDP is rising slower. A fall in GDP is represented by a negative % change.
GDP per capita (S\$) Calculated @ current prices	GDP <u>per capita</u> refers to average GDP. It is calculated using GDP divided by population size. (<i>Note that in this case it is calculated at current prices this means that this is a nominal figure.</i>)
Unemployment Rate (%)	This measures the percentage of people (in the labour force) of working age, who are willing and able to work but are unable to find employment. This is an important indicator of employment but it does not tell you about the cause of unemployment (cyclical / structural / frictional / seasonal). You would need to read accompanying extracts to get a better picture.
Inflation Rate (%)	This measures the rate at which general price level in the economy is rising. It is too an important indicator of the health of the economy. However, it does not tell you the cause of inflation (Demand-pull or cost-push). You would need to read the extracts.
Total Trade in Goods & Services (S\$ millions) At Current Prices	Total trade is export revenue + import expenditure . It is used to measure the openness of the economy. Looking at the figure as a proportion to GDP, total trade is about 4 times of GDP in Singapore illustrating our dependency on trade.
Exports of goods and services (S\$ millions)	If we take export revenue – import expenditure, we get trade balance/balance of trade/net exports. Note: Total trade volume and net exports are different.
Imports of goods and services (S\$ millions)	



Comparing Standard of Living Over Time (Within same country)

Definition of Standard of Living (SOL)

Involves the economic & social well-being of the people in a country which includes both the material & non-material aspects of life. The material aspects consist of the quantity & quality of the goods & services available for consumption while the non-material aspects consist of the quality of life such as the quality of the environment, leisure hours & level of stress, etc.

Changes in the level of real GDP per capita

Nominal GDP shows the **value** of **final** goods and services **newly** produced by residents of the country within the geographical boundaries over a time period.

Nominal GDP is a misleading indicator of economic growth, especially for a country experiencing high rates of inflation. For purposes of comparison, real GDP figures should always be used.

Real national income is used because it measures the value of output at constant prices, and any increase must mean a rise in physical output, and hence SOL. On the other hand, a rise in nominal national income could be due to increases in prices with negligible increase in output, which leads to negligible improvement in SOL.

Population tends to grow over time, so one has to consider how the rate of change of population compares with the rate of change of national income. If the population grows faster than real national income, the individual's share of real national income falls. In other words, the SOL maybe **understated** or **overstated** if we do not take into account population growth. Thus a more accurate indicator of changes in standard of living over time is **real GDP per capita**.

Real GDP per capita takes away the effects of price changes and the effect of population changes. If the real GDP per capita is higher than a year before, then it implies that there are more goods and services available for an average resident.

Real GDP growth per capita (%) =

Nominal GDP growth (%) – Inflation rate (%) – population growth rate (%)

Nominal GDP growth (%) =

Real GDP growth (%) + Inflation rate (%) + population growth rate (%)

Note: Such approximation is more accurate if changes in % are small.

	Table 2							
Year	Real GDP Growth (%)	Inflation rate (%)	Population Growth (%)	Nominal GDP Growth (%) by approximation	Real GDP Per Capita Growth (%) by approximation			
2006	8.9	1.0	3.2	9.9	5.7			
2007	9.1	2.1	4.3	11.2	4.8			
2008	1.8	6.6	5.5	8.4	-3.7			
2009	-0.6	0.6	3.1	0	-3.7			
2010	15.2	2.8	1.8	18.0	13.4			

From the above table, we can see that in 2008 and 2009, real growth was low and negative respectively and population growth was much higher. As a result, the real GDP per capita was negative and the average person was worse off.

On the other hand, in 2010, due to the strong rebound from the global recession driven by strong external demand, real GDP per capita jumped to a double digit.

HOWEVER, did we really become better off in 2010?

We need to scrutinise more details such as the following:

OTHER MATERIAL ASPECTS

(1) Changes in the distribution of GDP

If the increase in real GDP per capita is not equitably distributed to the people in the country, one cannot say that the average person is better off when there is an increase in real GDP per capita.

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To know the distribution of GDP, we need to have the Gini coefficient which is derived from the Lorenze curve.

The Gini coefficient in Singapore used to be on a rising trend (from 0.436 in 1990 to 0.481 in 2009 and ranked bottom 29th in the world, i.e. serious income inequality).

Many countries (like Singapore) experienced an increase in income inequality mainly due to globalization. Singapore was no exception. For the more developed countries, there is a transition to a knowledge-based economy resulting in more opportunities available in high-skilled areas while low-skilled production is phased out. Those who are highly educated and possess the relevant skills would experience a fast increase in income as the demand for such workers will increase while those who are low-skilled would have difficulty getting employment resulting in the fall in demand for such workers who may have to settle for a low-paying job, worsening income inequality.

In addition, freer flow of labour meant there was greater competition for the low-paying jobs as supply of unskilled or low-skilled workers is abundant. Skilled workers on the other hand had more opportunities elsewhere. Employers would have to pay a higher wage to retain talents. This widened the income gap.

However, Singapore's Gini coefficient has since been on a decline, falling 0.452 in 2015 to 0.375 in 2020 reflecting the redistributive effect of government taxes and transfers.

(2) Composition of GDP

GDP measures a country's level of production but may be a poor indicator of the consumption level by a country's residents. This is because a country's output includes both consumption goods and investment goods but current SOL depend only on consumption goods. Hence, for judging changes in consumer welfare, it is important to consider the composition of GDP as well as its size. We must determine which part of the GDP is for consumer use & which part for producers' use.

If the growth of 12.7% is due to expenditure on defence or capital goods, or exports, then we cannot say that consumers are better off especially if these goods are produced at the expense of consumer goods for the locals, then the standard of living may not be improved. For example, if government builds more office building and thus resulting in a higher GDP figure, there will be no change in living standard.

Evaluation: However, in the context of Singapore, it is unlikely that expenditure on defence and investment goods is reduced since this will affect the living standard of the population currently & in future. But having a large expenditure on defence and investment goods does not necessarily mean that living standard has deteriorated because we need to consider how large consumer goods are represented in GDP. If the proportion of consumer goods remains high or is even higher now, then current SOL would have improved.

NON-MATERIAL / INTANGIBLE ASPECTS

Non-monetary transactions vs monetary ones

GDP statistics include only monetary transactions. Thus, if a non-monetary activity becomes a monetary transaction, this will increase the NI figures without a corresponding increase in welfare.

Evaluation: For example, the women in Singapore account for approximately 50% of the total labour force. If women who were previously housewives start working, this will represent a loss in the quality and quantity of services rendered to their families and thus, a fall in living standard.

Disamenities (e.g. longer working hours & a more stressful lifestyle)

Increases in national income may arise as a result of people having to work harder or longer hours. In this case a growth in national income will overstate the improvement in the quality of life. Similarly, if national income rises over time and the length of the typical work day shortens (Labour productivity increases as a result of technological advances), then a growth in national income will understate the improvement in economic welfare.

Negative externalities (e.g. pollution & congestion or destruction of the environment)

National income figures take no account of externalities produced by the economy. Many consumption processes such as driving and smoking create harmful by-products, which harm the environment and also result in congestion and health issues leading to loss of man hours that affect productivity. Such external costs are difficult to measure and are also not captured in the national income figures, which only reflect private costs. Thus, if increases in output are accompanied by increases in pollution, greenhouse effect, congestion, etc, then the resultant rise in national income would **overstate** the rise in the welfare of society.



CONCLUSION

It is difficult to conclude that there is a rising SOL based on the real GDP per capita growth figures given. However, in terms of material aspects of SOL, the average Singaporean might be better off but similar conclusion is difficult to reach when we consider the non-material aspects of SOL. Apart from what was explained above, an economist will need additional information to fully ascertain if indeed standard of living has improved or worsened over time for an average person in an economy. In recent years, alternative indicators such as **Net Economic Welfare (NEW)** which adds to GDP certain items such as leisure & housewives' services and subtracts from GNP unmet costs of pollution & other disamenities of modern urbanization and the **Physical Quality of Life Index (PQLI)** that includes the intangibles such as life expectancy at age one, infant mortality rate & literacy rate have been used by modern economists to further access the SOL of the country.

Comparing Standard of Living Over Space (Between Countries)

Nominal GNP shows the **value** of **final** goods and services **newly** produced by nationals of a country regardless of the locations, over a time period. It can be calculated by adding the net factor income from abroad to GDP.

National income, in the form of real GNP per capita is a common yardstick used in comparing SOL between different countries, as the data is relatively easy to obtain. However, there are several problems involved in comparing the NI figures of different countries. Some high-income countries, for example, enjoy per capita incomes ten times higher than those of developing nations. This does not necessarily imply that the SOL in the high-income countries is ten times better than those of developing nations. We must therefore consider the following when making international comparisons of SOL.

The following have to be considered when making international comparisons of SOL:

(1) Different currencies are involved

The differences in currencies pose a problem in international NI comparisons. The UK GNP figures will be denominated in £ sterling while the Japan's GNP will be in Jap ¥. It is an accepted policy to convert NI estimates in the respective national currencies to a universally accepted currency, i.e. the US\$, for comparison.

Limitation: However, this may not be satisfactory as the exchange rate between currencies may fluctuate for various reasons, and with each fluctuation, the converted NI changes in value. Official exchange rates are not always reliable since they are subject to manipulation by the government or huge capital flows.

Evaluation in the form of suggestion: As an alternative, the **Purchasing Power Parity** (PPP) is often used to eliminate some of the shortcomings of the official exchange rate. The PPP tells us how much goods and services can be bought by a unit of currency at home compared with the purchasing power of other countries' currency. Converting each country's GNP using PPP rates rather than official exchange rates tend to lead to more accurate comparisons of NI.

From Table 3, using GDP per capita (PPP), Singapore's national income per capita appears much larger than that suggested by GDP per capita (current exchange rates in US\$). This is also true for Hong Kong and South Korea.

Comparing living standards between Singapore and United States using GDP per capita (current exchange rates) in US\$, the average Singaporean has a lower standard of living than the Americans. However, if we were to use the GDP per capita (PPP), which would take into account the differences in cost of living between the two economies, the average Singaporean would seem to have a higher living standard. This means without using PPP figures, such comparisons may **overstate** or **understate** the standard of living of the economies.

Table 3: Rank of selected economies by GDP per capita (PPP) and GDP per capita (current exchange rates) in US\$, 2014

	World Rank (PPP)	GDP per capita (PPP)	World Rank (current exchange rates)	GDP per capita (current exchange rates)
Singapore	2	83,066	9	56,287
United States	10	54,370	11	54,370
China	88	13,224	80	7,572
India	124	5,808	145	1,608
South Korea	30	35,379	30	27,970

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Hong Kong	9	55,097	25	40,033
Taiwan	19	46,036	37	22,600
Sweden	17	46,219	7	58,536

Source: International Monetary Fund, World Economic Outlook Database, October 2015

(2) Differences in population

Similar to comparing national income over time, it is crucial to look at the per capita figures to ascertain the difference in material SOL, since population growth will be different for different economies.

From above table, if we were to use GDP (PPP) in US\$m to compare the standard of living between countries, one would possibly say that China has a higher SOL than Singapore since its GDP is 35 times higher. Such a conclusion would be **understating** the SOL for Singapore and **overstating** for China. Because, if we were to compare using the GDP per capita figures, the outcome would be very different. Singapore's GDP per capita is 7.5 times higher than China's, indicating that the average Singapore is able to consume more goods and services and hence will have a higher material SOL.

Similarly, the US may have a much larger GDP (about 50 times) compared to that of Singapore and may mislead people to think that Singaporeans are worse off. But in terms of GDP per capita, Singapore's is higher than that of the US.

(3) Differences in external costs (negative externalities)

Developed economies (USA) tend to have lower growth rates than emerging economies (China). This may suggest their standard of living is worse off. However, the higher output levels in these emerging economies may be accompanied by higher levels of pollution, congestion and depletion of natural resources. Hence, it can be seen that higher output levels could lower SOL for such countries. Moreover, SOL in the developed economies may be higher since they tend to have more stringent environmental laws that safeguard the quality of life. Therefore, solely looking at national income statistics alone is insufficient to give a true picture of the standard of living between countries, i.e. it may **overstate** or **understate** the SOL.

CONCLUSION

While there are numerous indicators available to compare economic levels of countries, there is still no single indicator that can provide an all-round comparison of SOL between countries. This difficulty is brought on by issues such as the challenge to gauge non-monetised sectors and the reliability of information provided by 3rd world nations. Despite this, although there is no holistic approach to this comparison, through a combination of complementary indicators to real NI per capita figures, such as the Gini coefficient and doctor to patient ratio, literacy rate, PSI, infant mortality rate, we can have a rough gauge of SOL between countries. However since the issue of the reliability of data provided by countries are still at question, the crux of this issue is to improve the reliability of the data of the countries, otherwise no indicators can provide a sound indication and therefore comparison of SOL between countries.

Other difficulties include:

Differences in the composition of national income

In US and the former Soviet Union, a significant proportion of their national income was derived from the production of military and space equipment. Such goods are not available for consumption, and contribute very little to consumers' welfare even if the real per capita income is high. On the other hand, the real income of some developing countries may be lower, but their production is concentrated on consumer goods and services. Their people would therefore enjoy greater consumer welfare despite their lower real income.

Differences in the distribution of income

A country's GNP per capita may be higher than that of another country, but its SOL may be lower due to greater inequality in the distribution of income. Again, a better measure might be to use the Gini coefficient as a basis for comparison. Global Gini coefficients for income range from 0.23 (Sweden) to 0.70 (Namibia). While developed European nations and Canada tend to have Gini coefficients between 0.24 and 0.36, the United States' and Mexico's Gini coefficients are both above 0.40, indicating that the United States and Mexico have greater inequality. Singapore's Gini coefficient was at 0.472 in 2010, suggesting greater income inequality then the US and developed European nations. Also, poor or developing countries usually have wider disparities in income distribution. Wealth is concentrated in a minority group of people who wield political power



Different size of the non-monetised sector

Comparisons of GNP per capita between countries will be misleading if the relative importance of their non-monetised sectors is vastly different. Generally, developing economies tend to have a larger non-monetised sector than developed economies. In the example of housewives' activities, there are more housewives in Asian economies than developed western economies. Hence national income statistics would tend to **understate** the true level of activity since they are not able to capture this level of economic activity in the economy, hence making the comparison inadequate.

Differences in the availability and reliability of data

The greatest difficulty in NIA is the lack of accurate data. Comparing the relatively more accurate estimates of advanced countries with that of more backward countries will yield misleading results.

Different accounting practices

Accounting practices differ across countries. Differences arise in the following cases:

- Different provisions for depreciation because of different accounting practices and tax laws. Thus when comparing the performance of two countries, it is advisable to use the 'gross' concept of NI.
- Some developing countries exclude change in inventory in their NI estimates because of the lack of data. Also, the method of valuing inventories differs from country to country.

Differences in the hours of work vs. leisure time

The higher GDP per capita in some countries may be the result of people working harder or longer. Hence, a higher GDP per capita does not necessarily mean a better SOL, if the increased GDP is due to longer working hours.

Sample Essay: N2012 Q6

- (a) How do economists compare the economic performance of different countries? [10]
- (b) Assess the extent to which Singapore's economic performance is the main determinant of its population's standard of living. [15]

Part (a)

Dissect Question Using the 3'Cs'			
C – Command word	How: Explain ways in which.		
C – Concept (s)	Economic performance I Indicators used for cross country comparison		
C – Context	General (No specific country given)		

INTRODUCTION

- Key words: Economic performance, compare, different countries
- Issue: Methods to compare economic performance over space
- Approach: This essay attempts to explain how economists go about comparing economic performance between countries

BODY: Ways to for compare Economic performance over space

Compare GNP/GDP(PPP) per capita for each country

- Growth Indicator: % change in real GDP/GNP over time.
- Real GDP per capita (Define) is the most basic indicator of economic growth and material SOL used by economists worldwide. It is already adjusted for changes in the GPL and population size.
- Using GNP instead of GDP would mean that we measure the income of residents of the country and not foreigners, which allow governments to have a better gauge of the SOL of their own residents. This may be increasingly important in highly globalized countries like Singapore where foreigners may make up a significant portion of the working population/ investors. However, it does not make much difference in computation usually.
- For over space comparisons, GDP (PPP-Adjusted using Purchasing Power Parity exchange rate) per capita is
 used as it also adjusts for <u>differences in costs of living</u> between the countries which will be especially stark and
 important when comparing developing vs developed countries.

Compare GNP/GDP(PPP) per capita growth rate for each country

Comparing the economic growth rate of the countries is also important, to show if economies are stagnating, growing or shrinking. This will better indicate if the economy is doing well, compared to just how affluent they are currently.

Compare the relative inflation rates of each country

- Another important indicator is the relative inflation rates of the country.
- Inflation being measured by %change in the consumer price index (CPI)
- However, if GNP/GDP (PPP) per capita figures are being used, then this is no longer necessary as the differences in cost of living are already taken into consideration.



Compare the relative unemployment rates in each country

- Indicator: %unemployed in the labour force
- Looking at those who are of working age willing and able to work but unable to find a job
- The ability of the economy to provide adequate gainful employment for the population is another important indicator
 of its performance. It may also indicate income inequality if unemployment is high and only those who are able to
 get jobs are benefitting from economic growth in the economy.
- Natural rate of UNN in a small country like Singapore is around 2-3% while for a bigger country would be 3-5%.

Compare the relative health of the countries' balance of payments

- The relative health of a country's BOP indicates the country's ability to pay for its foreign transactions, including imports. This hence also indicates the likelihood of the country needing to borrow funds to fund its overseas transactions.
- Hence a healthy BOP is an important indicator when comparing countries' economic performances.
- For open economies, the net exports (X-M) is especially important. Countries with BOT surpluses (e.g. China, SG) generally regarded as showing better performance in trade relative to countries with deficits (e.g. USA). (Due to link to growth end of the day)

CONCLUSION

Economists would use the above economic indicators of each country to compare the relative economic performance of the countries. However, using these indicators as the main determinant of a country's SOL does not give an accurate picture, as they do not indicate the non-material SOL of the residents amongst other limitations. Hence more holistic indicators need to be included.

Part (b)

Dissect Question Using t	he 3'Cs'
C – Command word	Assess: Consider in a balanced way the points for and against something
C – Concept (s)	Standard of living- material/ non material
	Limitations of using Economic performance as main indicator of SOL
C – Context	Singapore

INTRODUCTION

Key words: Standard of Living (Define), Economic performance, main indicator

Issue: Limitations of using Economic performance as main indicator of SOL Approach: This essay aims to assess the use of economic performance as the main indicator of SOL

BODY	
R1: Economic performance is a m	ain indicator of SOL
 Economic growth and inflation rate (% change in Real GNP per capital) Unemployment rate Balance of payments (BOP) in particular the Balance of Trade 	 Economic performance is commonly used to indicate/ compare the material SOL of a country, which indicates changes in value of goods and services enjoyed by an average person in the population. Increases in this are often taken to reflect an improvement in SOL. Ability to be gainfully employed and earn a living will definitely affect the SOL. Balance of trade may not directly affect the average Singaporean's current SOL. EV1: However, the balance of trade and in particular how much imports Singaporeans get to consume can be a reflection of Singaporean's affluence, though Singapore is generally very dependent on imports, regardless of the degree of affluence.
R2: Problems faced with the use of	of Economic performance as the main indicator of SOL
Increase in real NI may be unequally distributed and benefit only the minority	 Indicators such as the GINI coefficient have been used to show that income inequality in Singapore is on the rise. This means that although real NI per capita has risen, only a minority of the population may have benefited from a rise in SOL. Hence increase in SOL may be overstated.
Components of the NI value that have increased may not affect/improve SOL. SOL only improves if there are more consumer goods and services for the average resident	 Economic growth in Singapore is significantly driven by exports and foreign direct investment which may not impact the current SOL of an average citizen directly. For example, exports are consumed by foreigners and hence an increase in their consumption, does not directly affect the SOL of Singaporeans. FDI in capital goods also do not directly benefit the average Singaporean. EV2a: In fact, if more resources are diverted from producing consumer goods to capital goods, the current SOL of the average Singaporean may actually fall.
Changes in non-material SOL are not reflected by the economic performance indicators of a country: Changes in levels of	 Other indicators of non-material SOL need to be taken into consideration rather than just economic performance. Amount of negative externalities inflicted on society are not accounted for in economic performance.

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Summary Tables: Key Economic Indicators, SOL & Circular Flow of Income

negative externalities and hours of work and a more stressful lifestyle	EV2b: However, increases in production are often inevitably followed by increases in pollution and harm to the environment.
	 congestion and pollution too. Hence indicators such as the PSI index and other environmental indicators can be considered to include the impact on the environment and hence SOL too. Economic growth and increased incomes often also mean longer working hours and more stress. Therefore, SOL may be overstated with economic progress.
	and more success. Therefore, OOL may be overstated with coordinic progress.

SUMMATIVE CONCLUSION

Therefore, although economic performance is definitely a key indicator of the material SOL of Singaporeans, it may not be a holistic picture and other indicators, especially of non-material SOL are also needed to supplement it. Common indicators used include HDI and NEW not only take economic growth into consideration, but also consider other factors such as infant mortality, literacy rate, non-monetised transactions, etc, to provide a more holistic picture of the SOL of the average Singaporean.

CIRCULAR FLOW OF INCOME AND EQUILIBRIUM INCOME

	2010	2011	2012	2013	2014	2015	2016
Private Consumption Expenditure (C)	114,519	119,308	123,770	127,911	130,950	136,962	137,744
Gross Fixed Capital Formation (I) <u>Note:</u> Students tend to be unfamiliar with this term.	91,028	93,937	106,738	111,676	107,689	104,481	101,026
Government Consumption Expenditure(G)	32,838	32,090	31,611	35,251	35,296	38,114	40,518
Exports of goods and services (X)	643,908	685,438	695,359	735,806	765,114	785,237	797,868
Imports of goods and services (M)	559,932	587,681	602,361	638,022	657,148	676,168	678,163
Expenditure on GDP (at 2010 prices)*	322,361	342,426	355,683	373,472	386,813	394,289	402,160

Table 4: Singapore Expenditure on Gross Domestic Product (S\$, millions)

after adjusting for statistical discrepancy

Source: http://www.tablebuilder.singstat.gov.sg/publicfacing/createDataTable.action?refId=1427

Candidates should be able to:

Explain what is meant by equilibrium in the macroeconomy using the circular flow of income and explain how the equilibrium level of national income will be determined/affected via the multiplier process by using:

- the circular flow of income framework **(i)**
- the AD-AS framework. **(ii)**

(i) Explaining the Multiplier Effect using Circular Flow of National Income

Assume there is an autonomous *increase* in investment of \$10m.

Introduction

The circular flow model can be used to explain how the equilibrium level of national income will be affected when there is an autonomous increase in investment of \$10m. It is a model of the continuous production, factor payment, income, and expenditure interaction among the four sectors (households, firms, government and foreign).

First Round

When there is an autonomous increase in investment of \$10m into the circular flow,

- First, \$10m enters into the goods markets for the purchase of \$10m worth of capital goods.
- Second, this \$10m is revenue received by the firms for this production.
- Third, this \$10m worth of revenue is then used by the business sector as factor payments to the resources that produce the capital goods.
- Fourth, this \$10m of factor payments becomes income of the household sector who are concurrently the resource owners.



• Fifth, the \$10m of income received by the household sector is then divided between consumption (\$6m) and withdrawals in terms of savings, taxes and imports (\$4m) based on MPC=0.6 and MPW=0.4.

Notably, this \$4m of withdrawals is a *leakage* out of the circular flow of national income. And \$6m of induced consumption expenditures remains in the circular flow to generate further rounds of production and consumption.



Figure 1: 4-Sector Circular Flow Diagram (First Round)

Second Round

The \$6m worth of consumption expenditures remaining in the circular flow generates another round of aggregate production, factor payments, income, and consumption.

- First, \$6m enters into the goods markets for the purchase of consumer goods.
- Second, this \$6m is once again revenue received by the business sector as payment for the production.
- Third, this \$6m revenue is then used by the business sector as factor payments to the resources that produce this round of <u>consumer</u> goods.
- Fourth, this \$6m of factor payments becomes additional income of the household sector.
- Fifth, the \$6m of income received by the household sector is once again divided between consumption (\$3.6m) and withdrawals (\$2.4m) based on MPC=0.6 and MPW=0.4.

With this round, a portion of the \$6m household sector is leaked out of the circular flow as withdrawals and a portion remains as consumption expenditures, which will generate another round of aggregate production, factor payments, income, and then even more consumption expenditures. And so the process continues.

Subsequent Rounds

The circular flow will experience several additional rounds of aggregate production, factor payments, income, and consumption expenditures. Each subsequently round, however, is smaller than the previous round, meaning that the process eventually winds down to infinitely small values.

Conclusion

Ultimately, the overall change in national output (25m) is a multiple of the initial change in investment (10m) that triggered the process. In this case the multiplier is 2.5 (k = 1/1-MPC = 1/1-0.6 = 2.5; $\Delta Y = \Delta I$ (10m) x 2.5 = 25m) – causing the national output to increase by two and a half times the increase in investment. The change in national output and income is divided between consumption (15m) and withdrawals (10m) based on the marginal propensity to consume (0.6) and marginal propensity to withdraw (0.4). The overall change in withdrawal (10m) is exactly the same as the initial change in injection (investment of 10m). Thus, the multiplier process will come to a halt when the addition to withdrawals equal to the change in injections, with the economy achieving equilibrium once again.

(ii) Explaining the Multiplier Effect using AD-AS analysis

Assume there is an autonomous *increase* in investment of \$10m.



• With reference to Figure 1, the economy is initially in equilibrium at Y₁ below full-employment output level, Y_{fe}

- An increase in investment of \$10 million will cause the I component to increase and cause an initial shift of AD (=C+I+G+X-M) rightward from AD₁ to AD₂ by exactly \$10 million (change in autonomous AD).
- This increase in *autonomous* expenditure of \$10m will generate revenue of \$10m for firms in the capital goods sector, which will then be used as factor payments to the resources that produce the capital goods.
- This \$10m of factor payments becomes income of the household sector who are concurrently the resource owners.
- Households will then divide this increase in \$10m of income between consumption (\$6m) and withdrawals in terms of savings, taxes and imports (\$4m) based on MPC=0.6 and MPW=0.4.
- The induced consumption of \$6m on <u>consumer</u> goods will further create income for individuals employed in the consumer goods industry, who will further spend their additional income on consumption. This cycle of spending and re-spending on consumption will continue until the increase in income becomes negligible.
- The <u>cumulative</u> increase in induced consumption can be illustrated by a further shift of AD rightward from AD₂ to AD_n by another \$15m (since MPC of 0.6; k = 2.5). ADn is where the multiplier process has come to a halt when the addition to withdrawals equal to the initial change in autonomous expenditure.
- Thus, the \$10m increase in investment has created a \$25m rise in national income.
- $\bullet \quad \mbox{Diagrammatically, the economy's output increases to a new equilibrium level at Y_n.}$

<u>Note:</u> The above explanation could be lengthened (similar to the one for circular flow) if this is meant for an essay question (e.g. 10 marks question).

For essay writing, depending on the question requirement, sometimes (when focus of the question is not on explaining the multiplier process) a succinct explanation of the multiplier process and a simplified diagram will suffice. Example:

An injection or autonomous increase in expenditure (e.g. investment or government expenditure) will generate income for individuals employed by firms in the capital goods industry. These individuals will spend a proportion of the additional income on consumption, depending on their marginal propensity to consume (MPC), and the rest will be withdrawn as savings, taxes and import spending. This spending further creates income for individuals employed in the consumer goods industry who will further spend their additional income on consumption. This cycle of spending and re-spending on consumption will continue until the increase in income becomes negligible, and the change in withdrawals is equal to the change in injections. The eventual increase in national income is several times the initial increase in expenditure. The multiplier, k, represents how many times the national income increases with respect to the initial change in expenditure.

<u>Note</u>: For the diagram, draw AS with only AD_1 and AD_n without the 'intermediate' lines and indicate Y_1 to Y_n will do.



Sample Essay: A Level N2009 Question 4(a)

The relative importance of the components of the circular flow of income for a small and open economy, such as Singapore, is likely to be different from a large and less open economy, such as the USA. [10]

- (a) Explain this statement.
- Assess whether a change in the external value of its currency is more likely to have a larger impact on (b) [15] Singapore or the USA.

Part (a)

- Must make reference to the circular flow of income diagram to achieve an analytical answer (i.e. attain L3)
- The term 'relative importance' must be explained.

Approach

- Explain what is meant by circular flow of income, with explicit reference to injections (I, G and X) and withdrawals (S, T • and M) within the 4-sector circular flow.
- Circular flow of income diagram to be used to illustrate
- Explain the differences in the size of various components of the circular flow of income for a small, open economy like • Singapore and a large country like USA.

INTRODUCTION

- The circular flow of income is developed by Keynes as a model for determining expenditure and hence income.
- In a 4-sector economy like Singapore and USA, withdrawals from the circular flow of income includes saving (S), taxes • (T) and imports (M). Injections on the other hands are made up of investment (I), government expenditure (G) and exports (X).
- The relative size of these various components of the circular flow of income differs for Singapore and the USA due • primarily to the different size and nature of these two economies.

BODY

R1: Circular flow of income in a 4-sector economy

Circular Flow of Income & Expenditure for a 4-sector economy



- In a simple 2 sector economy, the circular flow of income comprises only of firms and households. Whatever that is • produced by the firms are assumed to be consumed by the households paid for by the income given to the households by the firms.
- However, referring to the diagram above, we can see that for open economies like Singapore and USA, there are . various factors which will cause money to 'leak' from the circular flow of income, and conversely, there are also injections into it.
- Total withdrawals from a country's circular flow of income can come from households saving part of their income (S), . paying taxes (T) and buying of imported goods (M).
- Likewise, not all receipts by domestic firms arise from the consumption of domestic consumers. Some are injected from outside of the circular flow of income in the form of exports (X), investment (I) and government expenditure (G).



•

R2: Relative importance of the components in the AD

For <u>Domestic Consumption, Cd</u> (inner flow)

- Cd would likely to take up a significantly smaller proportion of GDP for Singapore as compared to USA:
- o It has a significantly smaller domestic market compared to USA
- o It has a high leakage of savings proportionate to GDP (APS) due to various savings scheme and virtue of thrift

For Government Expenditure (G)

 One can expect the size of G to be relatively larger component of GDP for USA as compared to that of Singapore: Stimulus packages to pump prime the US economy

For Exports Revenue (X) and Imports Expenditure (M)

- The Singapore economy is a much smaller country (no natural resources) compared to the USA economy and hence, is very dependent on imported goods, both in terms of raw materials and finished goods. Hence, Singapore will have a higher level of leakages relative to that of the US's.
- Singapore has a small domestic market hence higher reliance on the external market to generate income and growth through export of its goods and services. Large external market also allows firms in Singapore to produce on a large scale so as to enjoy internal EOS.
- Any chances in X (injection) and M (leakage) would be relatively more significant in changing the GDP for Singapore than USA. This importance was most clearly reflected by the fact that Singapore went into a recession in 2009 as a result of the fall in demand for her exports
- Hence, the relative importance of the components of the circular flow of income will be different. X and M will be much more important to Singapore than USA.

<u>CONCLUSION</u>: Due to the different unique characteristics of Singapore and USA, the relative importance of each component that makes up the circular flow of income is vastly different.



Appendix E: Summary Table on Macroeconomic Goals, Problems & Policies

Macro Goals &	Macro	Consequences of	_	Policie	s
Benefits/Costs	Problems	Macro problems	Causes	How it works	Limitations / Trade-offs
 Benefits/Costs Economic Growth Short run growth: ↑AD or ↑AS (fall in unit COP in the economy) → ↑ real output Long run growth: AS (Yf, productive capacity) needs to continually shift right over time Benefits of Growth Increase output, income, consumption and hence material SOL for households Increased revenue and profits for firms Creates jobs, reduces unemployment for the economy Costs of Growth Demand-pull inflation Overcrowding and congestion in cities Non-inclusive growth Structural Unemployment Worsening income Inequality Unsustainable growth Environmental degradation Depletion of natural 	Problems Slowing or low growth i.e. economic downturn or slowdown Negative growth i.e. recession	Slower rise or falling output, income, consumption and material living standards; rising unemployment	Causes Jow or Negative Short Run Growth ↓AD Causes ↓C Poor economic outlook, higher i/r higher personal taxes ↓I Poor economic outlook, higher i/r ↓I Poor economic outlook, higher i/r higher corporate taxes ↓G Contractionary fiscal policy leading to a hard landing; austerity measures to reduce fiscal debt ↓X Price factors (↑PX) • Appreciation of domestic currency • High domestic inflation Non-price factors (↓DDx) • Loss in trade competitiveness • Global economic downturn • Rising global competition • Protectionism and other unfair trade practices by trading partners • Higher costs of key inputs like land, labour and oil, which will raise economy wide costs of production → horizontal portion of AS curve shifts up → ↓ real output • Supply shocks like social unrest, armed conflicts and natural disasters → destruction of labour and capital → ↓ AS (vertical portion shifts left) → ↓output (applies to both short and long run)	How it works Expansionary Fiscal Policy • ↑G or/& ↓T (which ↑C+↑I) → ↑AD • ↑Y → ↑C (induced) → ↑AD (multiplier effect) Note: while the multiplier effect works for all demand management policies, it is only important for EFP as (1) G typically forms a small part of AD; (2) EFP results in government debt, which needs to be paid back in the future. Expansionary Monetary Policy • ↓i/r → ↑C+↑I →↑AD (primary effect) • ↓i/r → hot money outflow → ↓ER → ↓Px & ↑Pm → ↑X & ↓M → ↑(X—M) →↑AD (secondary effect) Note: When i/r is cut until zero, the central bank can still expand money supply via Quantitative Easing (QE). Exchange Rate Devaluation • ↓ER → ↓Px & ↑Pm → ↑X & ↓M → ↑(X—M) →↑AD Note: Exchange rate policy can also be seen as a form of monetary policy There is no need to apply PED when analysing the impact of ER changes on the net exports i.e. the (X-M) component of AD. (Short Run) Supply Side Policy • Reduce production cost in the economy → ↑AS (horizontal portion shifts down) → ↑ real output	 Limitations / Trade-offs Small multiplier Crowding-out effect G generally forms a small portion of AD (total demand) Size of domestic demand relative to external demand Long time-lags Tax insensitivity when economic outlook is poor Accumulation of fiscal debt Interest insensitivity due to poor economic outlook Commercial banks unable and unwilling to lend due to excessive bad debts / non-performing loans Zero lower bound Creation of asset bubbles Imported cost push inflation The demand for the country's exports may be price inelastic Imports may have limited locally produced substitutes Retaliation via competitive devaluation or protectionism Wage subsidies: too costly for most governments to employ CPF cuts: disrupts households' financing of housing and retirement
resources			 Slow Long Run Growth Stagnation in the quality or quantity of factors of production like capital and labour 	 Examples include wage subsidies and CPF cuts (Singapore context) (Long Run) Supply Side Policy Develop infrastructure; promote private investments, R&D, training and education; pro-natal policies (to raise productive capacity, Yf) 	 Costly and requires long term planning and goods foresight Extremely long time-lags / long gestation periods



HWA CHONG INSTITUTION Year Two H2 Economics 2024 Summary Tables: Macroeconomic Goals, Problems & Policies

Macro Goals &	Macro	Consequences of		Policie	S
Benefits/Costs	Problems	Macro problems	Causes	How it works	Limitations / Trade-offs
Sustainable Growth Growth that is achieved without excessive resource depletion environmental degradation Note: There must be economic growth in order to have sustainable growth	Depletion of non- renewable resources Environmental Pollution	Insufficient resources for future generation i.e. current growth is at the expense of future growth Destruction of environment reduces non-material SOL	 Resource depletion/ environmental degradation: Common resources like oceans, atmosphere and forests are overused due to the lack of property rights over such resources Deforestation caused by forests being cleared to obtain land for economic activity Environmental Pollution/ negative externality: Production requires resources and generates waste which results in pollution Economic development requires economies to industrialize and specialise in heavy industries which tend to be highly polluting Cleaner and less resource intensive production methods tend to be costlier than dirtier and more resource intensive methods 	 Management of common resources through international agreements Policies to promote the development of industries which are relatively less polluting and resource intensive Various policies to manage negative externalities 	 International agreements are voluntary and hard to enforce Possible trade-offs in terms of less favourable terms of trade and slower economic growth Refer to summary tables on Market Failure & Govt Intervention
Inclusive Growth Broad-based growth which equally benefits all income groups Note: There must be economic growth in order to have inclusive growth	Widening income disparity / inequality	Potential social and political stability which will eventually harm growth and employment	 Differences in labour productivity due to disparities in natural ability and human capital Unequal distribution of wealth i.e. the rich tend to own more income generating assets like businesses, stocks and property than the poor Develop countries CA is in capital, technology and skill intensive goods so the rich (e.g. high skilled workers and capital owners) benefit more than the poor (low skilled workers) 	 Redistribute income and wealth via progressive taxes and subsidies Redistribute welfare by taxing luxuries and subsidizing necessities Promote education Retraining and skills upgrading Promote industries which provide improved employment opportunities for less skilled workers 	 May create disincentives to work, save and invest Distortionary and difficult to classify the goods Extremely long time-lags Lack of education Possible trade-offs in terms of less favourable terms of trade and slower economic growth
Price Stability i.e. low inflation Benefits • Encourages production as factor prices tend to lag behind product prices thus raising firms' profitability	High inflation	Causes inflationary expectations which distorts prices signals (allocative inefficiency) Discourages savings, investments and growth (dynamic inefficiency) Results in shoe leather and menu costs	Demand Pull Inflation ↑C Positive economic outlook, lower i/r, lower personal taxes ↑I Positive economic outlook, lower i/r, lower corporate taxes ↑G Expansionary fiscal policy ↑X Depreciation of exchange rate, global economic upturn Cost Push Inflation	Contractionary Fiscal Policy • \downarrow G or/& \uparrow T (\downarrow C+ \downarrow I) $\rightarrow \downarrow$ AD Contractionary Monetary Policy • \uparrow i/r $\rightarrow \downarrow$ C+ \downarrow I $\rightarrow \downarrow$ AD (primary effect) • \uparrow i/r \rightarrow hot money inflow $\rightarrow \uparrow$ ER \rightarrow • \uparrow I/r $\rightarrow \downarrow$ hot money inflow $\rightarrow \uparrow$ ER $\rightarrow \downarrow$	 Hard to cut govt spending on long term projects Tax insensitivity when economic outlook is positive Political unpopularity of cutting spending and raising taxes Raises financial burden of existing firms and households as they need to service their loans with higher interest
AD may be insufficient hence resulting in slow growth and high unemployment		(productive inefficiency) Reduces the country's trade competitiveness	 Align proces of imports (imported imitation) ↑Wages > ↑productivity (wage push inflation) Price hikes arising from exploitation of market power (profit push inflation) Rising prices due to government policies e.g. GST hike, reduction in COE quota and hike in foreign worker levy (statutory cost push inflation) 	 →↓AD (secondary effect) Exchange Rate Revaluation Exchange rate revaluation: ↑ER → ↓Pm →↑AS (horizontal portion shifts down) → ↓GPL 	payments Low dependence on imports

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HWA CHONG INSTITUTION Year Two H2 Economics 2024 Summary Tables: Macroeconomic Goals, Problems & Policies

Macro Goals &	Macro	Consequences of	Poli		S
Benefits/Costs	Problems	Macro problems	Causes	How it works	Limitations / Trade-offs
			 Adverse events causing supply to fall like natural disasters, armed conflict or social unrest (negative supply shocks) 	 ↑ER → ↑Px & ↓Pm → ↓X & ↑M → ↓(X -M) →↓AD Note: ER policy can be considered a form of monetary policy There is no need to apply PED when analysing the impact of ER changes on the net exports i.e. the (X-M) component of AD. 	 The demand for the country's exports may be price inelastic Imports may have limited locally produced substitutes Harms trade competitiveness Loss of FOREX reserves
				(Short Run) Supply Side Policies	
				Price control on necessities, wages & rentals (Prices & Incomes Policy)	 Allocative inefficiency and black markets
				(Long Run) Supply Side Policies	Refer to section on promoting
				 Polices to raise the countries productive capacity (to raise Yf) Anti-monopoly policies 	long run growth • Refer to summary tables on Firms & Decisions
	Deflation	Economic agents delay purchases in anticipation of lower prices \rightarrow AD contracts further \rightarrow deflationary spiral	Usually arises after a prolonged period of economic recession (e.g. during the Great Depression, Global Financial Crisis, Japan's lost Decades of Growth)	Refer to policies to counter low or negat	ive short run growth
Low Unemployment Benefits	Cyclical (demand deficient) unemployment	Consequences of unemployment • Loss of income and	Refer to policies to counter low or negative short r	run growth	
The adverse consequences of unemployment will be less severe Costs	Structural unemployment	 lower material SOL for households with unemployed members Productive inefficiency due to less utilization of labour resources i.e. 	Mismatch of skills due to economic development, technological advancement and globalisation which results in loss of comparative advantage in low skilled sectors, rising competition from emerging economies, outsourcing and offshoring of production process to lower cost producers,	 Supply Side Policies Retraining Economic restructuring to create new industries / jobs which can absorb the retrenched workers 	 Lack of education, long retraining period for highly technical and complex skills New jobs created may pay less and have poorer working conditions that the jobs lost.
 Economy may be experiencing high demand- pull inflation if there is excessive stimulation of AD 	 Fiscal strain due to loss in revenue from income and consumption taxes 	inflow of cheaper foreign labour	 Protectionism Provide subsidies or impose import barriers to protect declining industries 	 Allocative inefficiency Retaliation from trading partners 	
	Frictional unemployment	 and spending on unemployment benefits Worsens non-material SOL due to crime and social stability Worsens economic outlook, which hampers investment and growth 	Imperfect information hence time is required for employers to find the right workers and workers to find the right jobs	 Facilitate job matching through job fairs, employment portals etc Reduce unemployment benefits Awareness campaigns to moderate job expectations 	 Not much limitations as these policies are not difficult to implement As such unemployment is temporary, it is usually not a main source of concern for policymakers



HWA CHONG INSTITUTION Year Two H2 Economics 2024 Summary Tables: Macroeconomic Goals, Problems & Policies

Macro Goals &	Macro	0	0	Policies		
Benefits/Conflicts	Problems	Consequences	Causes	How it works	Limitations / Tradeoffs	
Favourable Balance of Trade (BOT)BOP measures the international flows of domestic currency in and out of a country and consists of the current		A trade deficit means a net withdrawal from the circular flow, which has a contractionary effect on the economy and may worsen an existing economic downturn but	Domestic reasons • Loss in comparative advantage: Structural problems resulting in excessively high costs or low productivity which translates to low economic competitiveness e.g. excessively high wages, powerful trade	 Expenditure Reducing Policies Aim is to reduce spending on imports through reduction in income Involves the use of contractionary monetary and/or fiscal policies 	 Refer to the section of on contraction monetary and fiscal policies for fighting inflation Will reduce growth and cause more demand deficient unemployment if the economy is already facing a downturn. 	
account (CA) and the capital financial account (KFA). The main part of the CA is the balance of trade (BOT) which is the difference between export revenue and import spending. The country has a favourable BOP position when it runs a trade surplus i.e. when export revenue > import spending	A large and persistent trade deficit	A trade deficit means that the country is not earning enough from its exports to pay for its imports so it must be paying for its imports by (1) overseas borrowing and/or (2) selling of asset to foreigners. Part of future income will flow abroad in terms of interest payments and profits,	 childra of restrictive labour laws, inadequate infrastructure, monopoly exploitation in essential services like utilities or transport, excessively high direct taxes that create large disincentives to work, save and invest Higher relative inflation rate causing domestically produced goods to become increasingly uncompetitive as compared to foreign produced goods An overvalued currency causing domestically produced goods to be less competitive as compared to foreign produced goods. External reasons 	 Expenditure Switching Policies Devalue the ER ↓Px (foreign \$) and ↑Pm (local \$) Assume Marshal-Lerner condition holds where sum of (PEDx and PEDm) >1, BOT will improve. Protectionism: import barriers → ↓Qm → ↓PmQm (local \$) Export subsidies → ↓Px (foreign \$) → ↑Qx → ↑PxQx (local \$) Note: ML condition is applicable when analysing the impact of currency devaluation on BOT. 	 Invites retaliation from trading partners in the form of competitive devaluations or protectionism Devaluation may cause imported cost push inflation Import barriers raises prices of imported consumer and capital goods, thus harming domestic households and firms respectively Import barriers are allocatively inefficient (distortionary) Imports may be price inelastic as they may be necessities or there may be a lack of domestically produced import substitutes 	
 A trade surplus means that there is a net injection into the circular flow, which will have an expansionary effect on the economy and is beneficial during an economic downturn. Costs 		If the trade deficit is due to imports of consumer goods, then current SOL is raised at the expense of its future SOL. If the deficit is however due to imports of capital goods.	 Unfair trade practices by trading partners to artificially raise their trade competitiveness e.g. undervaluation of currency, export subsidies and protection against imports 	 Supply-Side Policies Aim to improve economic competitiveness Policies include improving infrastructure, reducing minimum wages, relaxing labour laws, curbing trade union power, controlling monopoly power, reducing direct taxes 	 Improving infrastructure is very costly and has long time lags Labour market reforms are in general politically unpopular Government may have vested interest in these monopolies Reducing direct taxes will strain the government budget and worsen income inequality 	
 A trade surplus can cause demand pull inflation if the economy is near full capacity and may invite trade retaliation from trading partners who are experiencing persistent trade deficits 		this will instead raise the country's productive capacity, so it may be able to generate more than enough output and income to pay for any future income outflows. Hence future SOL may not necessarily worsen.		 Economic Integration Signing of FTAs to expand export markets 	 Negotiating FTAs is a difficult and time consuming process FTAs will raise imports from FTA partners and may cause overall import spending to rise Economic costs arising from trade diversion may exceed the benefits arising from trade creation 	



Appendix F: Summary Table on Exchange Rate Systems and Impact of Change in Exchange Rate

The exchange rate of a currency refers to its value measured/expressed in terms of a foreign currency (or another currency)

- A currency appreciation/revaluation occurs if its value increases relative to a foreign currency. This means the same unit of the currency can now be exchanged into more foreign currency.
- A currency depreciation/devaluation occurs if its value decreases relative to a foreign currency. This means the same unit of the currency can now be exchanged into less foreign currency.

Exchange Rate Systems (Note: A comparison of exchange rate systems is NOT required in the syllabus, but knowing it will enhance your appreciation of how Singapore uses the managed float exchange rate system)				
Freely floating exchange rate system	Fixed exchange rate system	Managed-float exchange rate system		
 In a floating exchange rate system, the value of a currency is determined purely by the forces of demand & supply. There is no central bank intervention to manage or fixed the exchange rate at pre-determined levels. Demand for a currency is derived from foreigners' demand for our goods and services and financial assets. Supply of a currency is derived from the residents' demand for foreigners' goods and services and financial assets. A change in equilibrium exchange rate occurs when there is a change in demand or/and supply of currency due to: a change in demand for exports & imports (perhaps due to changes in relative price levels, real income, taste & preferences) when there is movement of speculative funds & remittances (perhaps due to changes in interest rate or anticipations of changes in exchange rate) 	The central bank of the country fixes & guarantees the official price of its currency in terms of other foreign currencies. The government is committed to maintain the fixed exchange rate by buying or selling its currency in the foreign exchange market using its reserves (gold and foreign exchange) to exactly offset the changes in market demand and supply. Note: When the government changes the exchange rate under this system, use the term devaluation and revaluation.	This system combines the features of a freely floating exchange rate with occasional intervention by the central bank to moderate undue short-term fluctuations. For the 'dirty float' system, the band for fluctuation is "undisclosed". Singapore and China are two countries that adopt a managed float exchange rate system.		
 relative price levels, real income, taste & preferences) when there is movement of speculative funds & remittances (perhaps due to changes in interest rate or anticipations of changes in exchange rate) 	term devaluation and revaluation.			



HWA CHONG INSTITUTION Year Two H2 Economics 2024 Summary Tables: Exchange Rate Systems and Impact of Change in Exchange Rate

	Impact of Changes	in Exchange Rate			
APPRE	CIATION	DEPRE	CIATION		
(+)	(-)	(+)	(-)		
	• $\uparrow ER \rightarrow \uparrow Px \& \downarrow Pm \rightarrow \downarrow X \& \uparrow M \rightarrow \downarrow (X-M) \rightarrow \downarrow AD \rightarrow \downarrow Y => \downarrow economic growth and \uparrow unemployment$	• $\downarrow ER \rightarrow \downarrow Px \& \uparrow Pm \rightarrow \uparrow X \& \downarrow M \rightarrow \uparrow (X-M) \rightarrow \uparrow AD \rightarrow \uparrow Y => \uparrow economic growth and \downarrow unemployment$	• $\downarrow ER \rightarrow \downarrow Px \& \uparrow Pm \rightarrow \uparrow X \& \downarrow M \rightarrow \uparrow (X-M) \rightarrow \uparrow AD \rightarrow \uparrow GPL => \uparrow demand pull inflation$		
inflation • ↑ER → ↑Px & ↓Pm → ↓X & ↑M → ↓(X - M) → ↓AD → ↓GPL => ↓demand-pull inflation	 Assuming PEDm > 1 → BOT worsens i.e. ↓(PxQx - PmQm) → less favourable BOT position 	 Assuming the Marshal-Lerner condition holds, where the sum of (PEDx and PEDm) > 1 → BOT improves i.e. ↑(PxQx – PmQm) → more favourable BOT position 	 ↓ER → ↑price of imported inputs → ↑production costs → ↓AS (horizontal portion of AS curve shifts up) → ↑GPL => ↑imported cost push inflation 		
 Note: Sectors with high import content will be affected more from changes in prices of imported inputs as compared to sectors with low import content Impact on AD and BOT may not be that significant in the short run as PEDx and PEDm tends to be low as both domestic and foreign consumers require some time to react to price changes and international purchases of goods and services are often bound by contractual agreements. The extent to which cheaper imports affect the AD depends on availability of locally produced import substitutes, the lower the availability, the smaller the impact If the depreciation of the exchange is due to deliberate central bank intervention to devalue the currency, this is likely to invite retaliation from the country's trading partners in the form of competitive devaluations or protectionism. 					
 Attracts FDIs meant for producing and selling goods to the domestic market as the profits will be higher in when repatriated back foreign currency Repels FDIs meant to use the country as an export base as these exports will become less price competitive in foreign currency Attracts FDIs meant to use the country as an export base as these exports will become more price as the profits will be lower in foreign currency Repels FDIs meant for producing meant for producing and the profits will be come less price competitive in foreign currency 					
PPP Adjusted Exchange Rates	X <i>Y</i>				
 The equilibrium rate of exchange between two currencies is determined by comparing the relative prices of a common basket of goods that are consumed in the two countries concerned i.e. we are comparing the relative purchasing power of two currencies in their home country The main limitation is that households in different countries have different consumption patterns, comparing a 'common basket of goods' may not be meaningful 					
Manipulation of Exchange Rates to Achieve Macroeconomic Goals • Refer to summary table on Macro Goals, Problems and Policies					
Singapore's Exchange Rate Policy					
 During 'normal' times As Singapore moves up the value chain over time, it should experience improving terms of trade so the SGD should naturally appreciate. MAS aims for a gradual and modest appreciation of the SGD so that imported inflation can be controlled without harming Singapore's trade competitiveness SGD is allowed to appreciate more when MAS expects inflation to be higher 					



Appendix G: Summary Table on Free Trade, Free Trade Agreement (FTA), Globalisation & Protectionism

International Trade: Exchange of goods and services across national boundaries						
Basis of International Trade is the Theory of Comparative Advantage : A country is said to have comparative advantage in the production of a good when						
she can produce the good at a lower opportu	she can produce the good at a lower opportunity cost than another country. (MUST know how to explain in terms of opportunity costs.)					
Free Trade	Free Trade Agreement (FTA)	Globalisation				
Free Trade It refers to the exchange of goods and services	Free Trade Agreement (FTA) An FTA is an agreement whereby member	Globalisation Globalization refers to the integration or inter-connectedness of national				

restrictions It is a policy of not imposing any		tariff barriers among themselves but each		& financial flows spread of technology and Labour migration			
restrictions. It is a policy of not imposing any		can retain whatever restrictions she wants					
services between c	countries	for non member countries. Housily, it close		Note that in report years there is suidened of deglebalisation as well			alphalisation as well
Services between t	ounnes.	includes better terms for investment in		Note that in recent years there is evidence of deglobalisation as well.			egiobalisation as well.
		includes better terms for investment in		Fasters offesting Olaholization (and deplething)			lipstion)
		loreign countries.		Factors anecting G	iobalisation (a	ind degloar	Disation)
				Economic Factor	Technologic	al Factor	Political Factor (Into
				Based on theory of	Revolutionary	break-	only)
				comparative	through in t	ransport &	Collapse of communism +
				advantage, trade	communication) roducco	whole world moved towards
				beneficial and	transport	octo and	a common economic
					facilitates	complex	system.
				for growth	communication	h which in	In recent times, the effect of
					turn supports	trade and	the dobal financial
				Govts protect firms &	investments		recession has encouraged
				jobs in times of			countries to raise trade
				recession	Tech a	dvancement	barriers.
					improve	resource	
					extraction,	making	
					countries less	dependent	
					on trade		
(.)		(-)	()	(.)			()
(+)	(-)	(+)	(-)	(+)		•	(-)
Higher	Unfair competition and	• <u>Trade Creation</u> : It	• <u>Irade</u>	• Same as (+) of fre	e trade <u>plus</u>	• Same as	s (-) of free trade plus
standard of	dumping	occurs when	Diversion: It	access to		 Econo 	mics instability
living: Lower	living: Lower • Over-reliance on foreign co		occurs when	• Raw materials and inputs • E		o Brain d	drain
prices, higher countries		a high-cost producer to	consumption	o FDI o Str		 Structu 	aral unemployment and
consumption o Susceptible to		a low cost producer.	shifts from a	 Foreign technology 		income	e inequality
and greater	externally-induced	 The rest same as (+) 	lower cost	 ○ Foreign labour ○ S 		 Social 	cost of increased
variety of	cyclical unemployment	of free trade but with	producer			immigr	ation
consumer	 Susceptible to 	<u>more emphasis on</u>	outside the			 Enviro 	nmental Degradation
	imported inflation	benefits of FDI as the	trading bloc				

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HWA CHONG INSTITUTION Year Two H2 Economics 2024 Summary Tables: Free Trade, FTAs, Globalisation, POT & Protectionism

goods and services • Trade as an engine of economic growth • Technological Transfer	 Structural unemployment Worsening balance of payment Widening income disparities within country Environmental degradation 	agreement has clear terms that advocate both free trade and investments between member countries.	to a higher cost one within it. • The rest same as (–) of Free Trade		Note: Worsening income inequality due to globalization is due to both free flow of goods & services as well as inflow of low-skilled foreign labour from developing countries to developed countries which depresses the wages of low skilled labour in developed countries.
Policies to \uparrow (+)	gains from trade/FTA/glo	balization and to \downarrow (–) co	osts of trade/FT	A/globalisation	
 Maintain Free Trade policy and pro-migration policy Diversifying our export markets to reduce overdependence on any single market (this policy is sometimes called "decoupling") Build resiliency to withstand external shocks Fiscal prudence and supply-side policies to main competitiveness Social safety nets for those who do not benefit from free trade/FTA/globalization Policies such as green taxes, tradable permits and regulations to reduce environmental degradation or negative externalities 					
Protectionism: Policies of sheltering domestic industries from foreign competition through the imposition of tariff and non-tariff barriers (must be able to analyse and explain these measures)					
Reasons for Prote	ectionism				
 Protection of in notential esperance 	fant industries: an infant i cially in the face of more e	ndustry is one that has pc stablished foreign compet	itential compara itors with the tree	ative advantage but is too young ad towards globalization	g or undeveloped to realise this
 Protection against unfair trade practices: example of unfair trade practices include dumping and currency manipulation. Dumping refers to the selling of the same good to a foreign country below the marginal cost of production. Currency manipulation involves the government's intervention in the currency market to push down the exchange rate below the free market value to gain unfair advantage by raising the price competitiveness of its domestically produced goods. Protection to improve trade balance & domestic employment Protection of declining or "sunset" industries Others: Protection of strategic industries and to achieve political objectives 					
Note: Must know the validity or limitations of these reasons.					



Appendix H: Interconnectedness and Possible Conflicts of Economic Objectives

Economic	Macro Economic	Policios	Conflicts			
Problems	Goals	Folicies	Macro goals	Micro goals		
Slow or negative actual growth	Actual and potential growth	 Demand management policies Expansionary fiscal policy Expansionary monetary policy → ↑AD hence RNO (actual growth) 	Growth & Price Stability: Forego price stability: results in demand- pull inflation (if increase in AD pushes the economy towards the full employment	Growth & Equity Forego equity (extent of equity worsening depends on the extent of unevenness in the distribution of income from economic growth)		
Slow potential growth	Ideal situation which governments aim for - increase in AD accompanied by an increase in AS	Supply side policies (SSP) – \uparrow productive capacity to \uparrow AS (increase Yf)	level and there is a bottleneck in production) Growth & Full Employment: While expansionary AD management policies can achieve growth and reduce cyclical unemployment simultaneously	 Conflict related to Policy Tools Reliance on pro-growth taxation policies: shift from direct to indirect taxation → may worsen inequality Reliance on pro-equity taxation policies: stophy prograssive inserve taxes 		
Unsustainable growth	Sustainable growth* *Assumes both actual & potential growth have been achieved	 Regulations to protect environment Policies to control –ve externalities Policies to encourage sustainable use of resources, e.g. 3Rs and the search for green alternatives 	they do not reduce structural unemployment. Growth & Favourable BOT: Worsening BOT in the form of increase in import expenditure or trade surpluses	Growth & Efficiency Forego allocative efficiency: economic growth may bring about market failure in the forms of externality, e.g. emission from industrial		
Non-inclusive growth	Inclusive growth*	 Levelling up (E.g. social safety nets, wage/ skills/ training subsidies) Levelling down (E.g. progressive taxation system) 		production and traffic congestion from car usage. Rapid economic growth today may exhaust resources (e.g. depletion of oil and fish) and create environmental problems (e.g. global warming) tomorrow		
Demand pull inflation	Price stability	Demand management policies – Contractionary FP / MP $\rightarrow \downarrow$ AD $\rightarrow \downarrow$ GPL	Price Stability & Growth/ Low unemployment Forego economic growth and low unemployment: results in lower output	Price Stability & Efficiency Forego allocative efficiency: price controls result in deadweight loss due to distortions in price mechanism		
Cost push inflation		 SSP to ↑ productive capacity to allow AS to grow in tandem with AD. SSP to lower production cost in the economy and SSP to raise productive capacity, e.g. price or income policies, restricting power of trade unions, increase quantity or quality of resources, etc. Exchange rate policy to control import price 	and higher unemployment if contractionary demand management policies push the economy below full employment level Appreciation of currency may result in slower growth and higher unemployment.			



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Summary Tables: Interconnectedness and Possible Conflicts of Economic Objectives

Economic	Macro Economic Policies Conflicts			Conflicts
Problems	Goals	Folicies	Macro goals	Micro goals
Cyclical	Low Unemployment	Expansionary fiscal / monetary policy to ↑AD Trade policies to ↑ X	Lowunemployment& PriceStability:Foregopricestability:resultsindemand-pull Inflation (if increase in ADpushes the economy towards the fullemploymentlevelandthereisabottleneck in production)Lowunemployment& FavourableBOT:ForegofavourableBOT (in the form of increase in import	 Low Unemployment & Equity Forego equity (extent of equity worsening depends on the extent of unevenness in the distribution of income from the economic growth and job creation) Conflict related to Policy Tools Reliance on pro-growth (encourage job creation) taxation policies: shift from direct → indirect taxation → may worsen inequality Reliance on pro-equity taxation policies: steeply progressive income taxes → discourage work
Structural Frictional		Supply-side policies	expenditure or trade surpluses)	effort → conflict with growth & hence reduces job creation <u>Low unemployment & Efficiency</u> Forego allocative efficiency: economic growth which creates jobs may bring about market failure in the forms of externality, e.g. emission from industrial production and traffic congestion from car usage.
Persistent outflow X <m< th=""><th>Favourable BOT</th><th>Expenditure switching (protectionism, devaluation) Expenditure reducing (Contractionary FP/MP) Supply-side policies</th><th>Favourable BOT & Growth/ Low unemployment Forego economic growth and low unemployment: results in lower output and employment if contractionary demand management policies push the economy below full employment level</th><th>Favourable BOT & Efficiency Forego allocative efficiency: Protectionism results in inefficient allocation of resources and deadweight loss</th></m<>	Favourable BOT	Expenditure switching (protectionism, devaluation) Expenditure reducing (Contractionary FP/MP) Supply-side policies	Favourable BOT & Growth/ Low unemployment Forego economic growth and low unemployment: results in lower output and employment if contractionary demand management policies push the economy below full employment level	Favourable BOT & Efficiency Forego allocative efficiency: Protectionism results in inefficient allocation of resources and deadweight loss

The areas identified above are merely illustrations of possible conflicts of objectives:

Think!	Note:
Do the following objectives conflict?	For ii) Unexpected inflation tends to distribute income away from the fixed income earners, pension
 Control of inflation and improvement in BOT 	holders and the poor towards the rich, e.g. shareholders, asset owners. Hence an attempt to control
ii) Control of inflation and equity	inflation may help achieve equity as well.
iii) Growth and reduction of unemployment	
iv) Equity & Efficiency	