

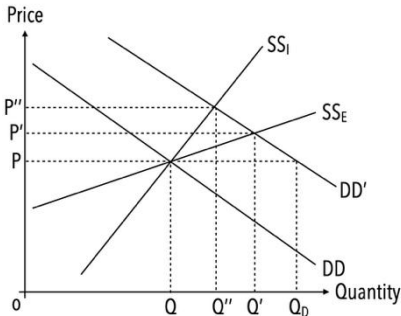
1.	Prices of agricultural goods tend to be volatile, with prices rising sharply in some years, then falling drastically in others. To stabilise farmers' income, the European Union's (EU) Common Agricultural Policy (CAP) ensures that prices of agricultural goods do not fall to unsustainably low levels, promotes agricultural goods both within the EU and globally, and allocates funds to support adoption of new technologies to deal with extreme weather.	
	(a)	Explain why prices of agricultural goods tend to be volatile. [10]
	(b)	Discuss the appropriateness of measures that can stabilise farmers' incomes. [15]

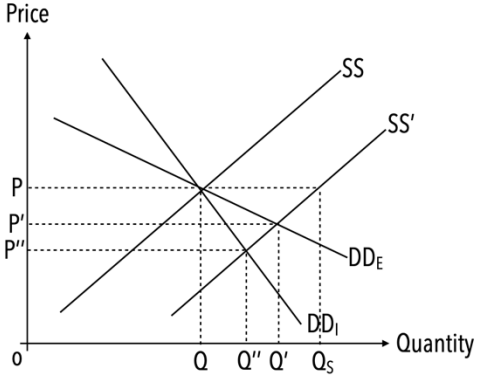
Question analysis

Command word	Explain why	Explain the reasons
Content	Prices	Price mechanism, non-price determinants of demand and supply, price elasticities of demand and supply
Context	Agricultural goods	
Approach	Explain why prices of agricultural goods tend to be volatile by explaining changes in demand and supply, coupled with relatively price inelastic demand and supply, that causes sharp rises and/or decreases in equilibrium price	

Suggested answer

Introduction	Prices are determined in the free market via the forces of demand and supply. The prices of agricultural goods tend to be volatile (i.e. sharp increases and decreases) as a result of large changes in its demand and supply, as well as a relatively price inelastic demand and supply.	Overview
Body	<u>Requirement #1: Price volatility – Sharp increase in price</u> An increase in world population could have led to an increase in demand for agricultural goods; coupled with a relatively price inelastic supply, this could have led to a sharp increase in its price. A rising world population would mean that there is more consumers in the market, which would lead to an increase in demand for food, a necessity, which in turn would have led to increase in derived demand for agricultural goods such as wheat, rice, and soy. In the diagram, we see that market demand has increased from DD to DD'. At the same time, the supply of such agricultural goods tend to be	Point Explain

	relatively price inelastic since it takes time to grow and harvest agricultural crops. At the original price, there is therefore a shortage generated since quantity demanded exceeds quantity supplied ($Q_D > Q$). This creates an upward pressure on price. As price increases, utility-maximising, budget-constrained consumers will cut back on quantity demanded, while profit-maximising producers increase quantity supplied to capture marginal profits. However, since supply is relatively price inelastic, the increase in quantity supplied would be less than proportionate to the increase in price; hence price would have to increase further to P'' (as compared to P') in order to clear the shortage in the market.  Therefore, this could have contributed to the volatility of prices of agricultural goods.	Market adjustment process Diagram Link
	<u>Requirement #2: Price volatility – Sharp decreases in price</u> Favourable weather conditions could have led to a bumper crop, causing a large increase in supply of agricultural goods; coupled with a relatively price inelastic demand, this could have led to a sharp fall in its price. The supply of agricultural crops is heavily dependent on weather conditions due to the nature of the good. Highly favourable weather conditions would have led to a bumper crop, significantly increasing supply. In the diagram, we see that market supply has increased from SS to SS'. At the same time, the demand for such agricultural goods tend to be relatively price inelastic since these agricultural goods are usually deemed as necessities. At the original price, there is therefore a surplus generated since quantity supplied exceeds quantity demanded ($Q_S > Q$). This creates a downward pressure on price. Similar to the market adjustment process as described above, as price decreases, profit-maximising producers will reduce quantity supplied to avoid marginal losses. On the other hand, utility-maximising, budget-constrained consumers will increase quantity demanded. However, since demand	Point Explain Market adjustment process

	is relatively price inelastic, the increase in quantity demanded would be less than proportionate to the decrease in price; hence price would have to fall further to P'' (as compared to P') in order to clear the surplus in the market.  Therefore, this could have contributed to the volatility of prices of agricultural goods.	Diagram Link
Conclusion	The volatility in agricultural prices would mean that farmers' incomes will also be similarly unstable. Governments have to consider various measures to stabilise their incomes, and this will be further explored in part (b).	Link to part (b)

LORMS

L3	Answer is relevant and students analysed <u>both</u> situations where prices of agricultural goods have increased <u>and</u> decreased. This is supported with detailed diagrams.	8 – 10
L2	Answer is relevant; however, student may have only explained <u>one</u> situation where prices of agricultural goods have increased (both the change in DD/SS and the use of PED/PES). This is supported with detailed diagrams – max L2 – 6m. Note: No use of elasticity concepts, but both situations of increase and decrease in prices are explained via <u>large</u> changes in DD/SS conditions – max 7m.	5 – 7
L1	Answer is largely irrelevant and/or there are major content errors and/or gaps present in the analysis.	1 – 4

Part (b)

Question analysis

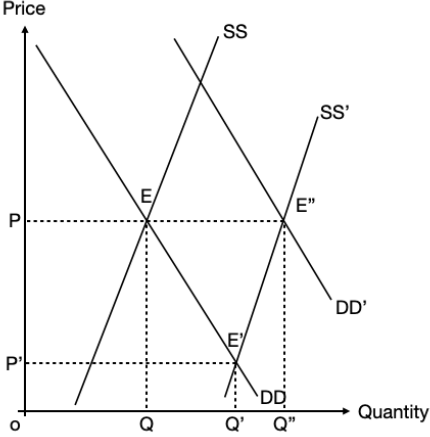
Command word	Discuss	Multiple perspectives required
Content	Measures to stabilise income	Price floor, promoting demand, technological innovations for weather resistant crops, and their limitations

Context	Agricultural goods and farmers	
Approach	Explain at least two measures that can stabilise farmers' incomes (e.g. price floor and measures to promote demand) and its possible limitations. <i>Note: Students can also bring in policies not mentioned in the preamble, e.g. indirect subsidies.</i>	

Suggested answer

Introduction	Prices of agricultural goods tend to be volatile as it depends more on the weather and the climate than other sectors. Hence, there is a need for the government to intervene with appropriate measures to support farmers' incomes, such as through price floors, to increase market demand and to promote innovations to develop weather-resistant crops. However, these are not without their limitations.	Overview
Thesis 1	<u>Requirement #1: Price floor to protect farmers' income</u> One measure that can stabilise farmers' incomes is a price floor, which is a legally established minimum price set above the market equilibrium price. This prevents the market price from falling below a sustainable level. Suppose there was a bumper crop that resulted in a large increase in supply in the market, causing market price to fall to P'. As established in part (a), the demand for agricultural goods is price inelastic due to its high degree of necessity. Hence, a fall in price will only generate a less than proportionate increase in quantity demanded, leading to a fall in total revenue received by farmers from OPEQ to OPE'Q'. Setting a price floor at P_F will prevent prices falling. This will however create a surplus in the market since quantity supplied exceeds quantity demanded ($Q_S > Q$). Assuming that the government buys up this surplus, this will increase producer revenue since both the price and quantity traded increased, from OPEQ to OPE''Q_S.	Point Explain how policy works to stabilise farmers' income Diagram

Anti-thesis 1	However, this results in a large deadweight loss in the market. There is a fall in consumer surplus by $PEE'P'$, which is captured by producers and serves to increase their producer surplus ($PE''E'P'$). The government spends $EE''Q_SQ$ buying up the surplus, a part of which has also been captured by the producers ($EE'E'$). However, the area $EE'E''Q_SQ$ is gained by no one and therefore represents a deadweight loss to the market. There is an inefficient allocation of resources in the market as the price floor interferes with price signals, causing a persistent surplus. Additionally, since the surplus needs to be bought up by the government in order to maintain the price floor, this also represents a drain on government reserves, and an opportunity cost is incurred – the government could have increased spending on education, healthcare, or other areas of social need. The surplus encourages overproduction, as more is produced than is socially efficient; this is made worse by the fact that traditional farming often generates negative externalities such as soil degradation and pollution from fertilisers/pesticides. Buying up the surplus also led to huge stockpiles, which cannot be stored for long – unless the government is able to sell the surplus back to the market at a later date <i>before</i> the goods spoil, this ultimately resulted in high cost (first of buying, then of storage) and wastage for the government.	Limitations
Thesis 2	<u>Requirement #2: Increasing market demand to protect farmers' income</u> Another measure that can stabilise farmers' incomes is to increase market demand for these products.	Point

	For example, under the CAP, agricultural goods are promoted both within the EU and globally, through promotion campaigns about EU farm products. This helps to open up new market opportunities for EU farmers, hence raising market demand.  Assuming that the increase in demand completely offsets the increase in supply as a result of the bumper crop, this helps to increase producer revenue from $OPEQ$ to $OPE''Q''$ since price remains unchanged but equilibrium quantity has increased from Q to Q''.	Explain how the policy works to stabilise farmers' incomes Diagram Link back to question
Anti-thesis 2	However, it is by no means certain that such promotion campaigns would be successful, or that the increase in demand will be sufficient to offset the increase in supply, such that prices do not fall to unsustainably low levels. Additionally, it is also expected that such measures will take some time before its effectiveness can be seen, since time is required for trade fairs to be set up overseas and for consumer taste and preferences to change.	Limitations
Thesis 3	Finally, the government can consider allocating funds to support farmers' adoption of new technologies to deal with extreme weather. This can also help to stabilise farmers' income by stabilising the supply of their crops. Climate change can destroy crops, which can reduce farmers' income since they may not be left with anything to sell when harvest is poor. By developing new solutions	Point Explain how policy works to stabilise

	such as weather-resistant crop varieties and low-water farming methods, this can maintain production and supply. Compared to a situation when crops are destroyed and farmers' revenue and incomes fall correspondingly, developing more weather-resistant crops enables farmers to stabilise production and therefore their income.	farmers' income Link back to question
Anti-thesis 3	The effectiveness of such a measure is ultimately uncertain since it depends on the receptiveness and willingness of farmers to adopt these new technologies and farming methods. The adoption of technology in the agricultural sector will result in a change of skill-sets required from farmers and farmhands, who may be more used to the traditionally labour-intensive methods of farming. Unless they re-skill and up-skill themselves sufficiently, these workers are likely to find themselves structurally unemployed, as their skills are no longer relevant to the changing demands of the industry.	Limitations
Synthesis	[Stand] Measures to increase market demand and to encourage farmers to adopt new technologies to deal with extreme weather are likely to be more appropriate in stabilising farmers' incomes as compared to setting a price floor. [Substantiation] This is because these measures are more likely to target the root cause behind why farmers' incomes tend to be unstable, as compared to setting a price floor. While a price floor works relatively quickly and can be implemented as a short-run solution to buy time for other methods to take effect, it does not tackle the root cause, which has been established in part (a) to be weather-related. Although measures to increase market demand and to encourage farmers to adopt technological innovations may take longer to have an effect, they can more permanently improve the stability of farmers' income in the long run. The government can also look into putting in place re-skilling programmes to help farmers and farmhands gain the skills they require to use the new technologies. Price floors ultimately cannot be a permanent solution owing to its substantial disadvantages in terms of allocative inefficiency and opportunity cost incurred from the use of government funds to buy up the surplus generated. In comparison, promoting market demand and encouraging farmers to adopt technological innovations does not result	Summative conclusion Criteria 1: Root cause Criteria 2: Unintended negative side effects

	in allocative inefficiency as it does not interfere with the workings of the free market.	
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LORMS

L3	Answer is two-sided. Both policies are explained thoroughly and supported with economic analysis in terms of how it may and may not stabilise farmers' income. There is good use of diagrams (where relevant) and points are supported with real-world examples.	8 – 10
L2	Answer is two-sided, although only one policy may be explained thoroughly and supported with economic analysis in terms of how it may and may not be able to stabilise farmers' income. The other policy may not have been developed in detail. Only one policy explained, two-sided (i.e. with limitations) – $A + 0 = L2 - 6m$ Two policies explained, single-sided (i.e. no limitations) – $C + C = L2 - 6m/7m$ (max)	5 – 7
L1	Answer is largely irrelevant or contain significant conceptual errors regarding how policies work to stabilise farmers' income.	1 – 4

E3	Two well-explained evaluative judgments about both policies plus a overall summative conclusion.	5
E2	Two well-explained evaluative judgments about both policies	3 – 4
E1	A well-explained evaluative judgment about 1 policy	1 – 2

Essay Question 2

The level of competition in various markets can change over time due to entry of new firms or consolidation among existing firms. In Singapore, the food and beverage (F&B) industry has experienced increased competition with the entry of many overseas brands. In contrast, the telecommunications sector may see reduced competition, following news of a proposed sale of M1 to its rival, Simba Telecom.

- With the aid of examples, explain why the long-run profits of a firm in a market with little or no barriers to entry would differ from a firm in a market with high barriers to entry. [10]
- Discuss whether increased competition in markets is beneficial for consumers and society. [15]

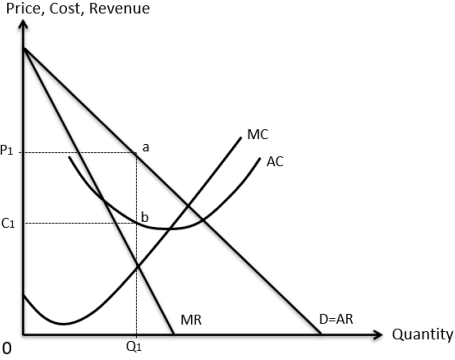
Question analysis

Command word	Explain why	Explain the reasons
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Content	Long-run profits, barriers to entry
Context	N.A.
Approach	Explain why the differences in the level of barriers to entry would lead to different long-run profit levels. In cases where barriers are high, firms can earn supernormal profits in the long run. In cases where there are low barriers to entry, firms can only earn normal profits in the long run.

(a) With the aid of examples, explain why the long-run profits of a firm in a market with little or no barriers to entry would differ from a firm in a market with high barriers to entry. [10]

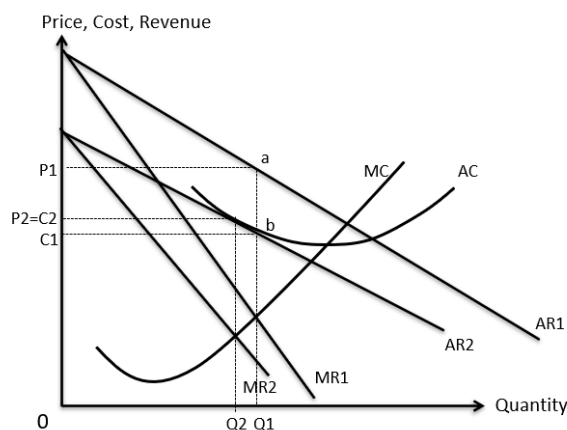
Introduction	Barriers to entry (BTEs) are anything that prevents or impedes the entry of new firms into an industry and thereby limits the degree of competition faced by existing firms. There are structural, strategic and statutory barriers. In the short run, firms can have subnormal, normal or supernormal profits but their long run profits would be different based on the level of BTEs.	Define key terms
Requirement 1	<u>Explain how a firm in a market with high BTEs would <u>can</u> retain supernormal profits in the long run</u> An example of a market where there are high barriers to entry is the telco services market which is an oligopoly. In the market, there are high BTEs. Firstly, there are high structural BTEs given the high cost relative to the demand. To set up a telco, firms would need expensive technology and infrastructure supporting the network that needs to be installed all over the country. Secondly, there are also statutory BTEs in terms of limited licenses by the government for telcos. All of these BTEs deter potential entrants from entering the markets. The telco market is characterised by having a few dominant firms such as what is observed in Singapore where there is M1/Simba, Starhub and Singtel. Each of these firms sell differentiated products whereby they have differentiated mobile phone plans with differences in the amount of mobile data or the quality of the mobile signals. This gives rise to each firm having significant price-setting ability or market power represented by a price inelastic demand curve.	Provide an example of the market and focus on explaining the high BTEs in the context chosen. Briefly explain the other characteristics.

	The firms are assumed to be enjoying supernormal profits in the short run as shown in the diagram below. The profit-maximising firm would produce at output Q_1 where $MC=MR$ and MC cuts MR from below. At Q_1, the maximum price would be P_1 which would mean the firm receives P_1aQ_1 in total revenue and C_1bQ_1 in total costs. The supernormal profit is P_1abC_1.  Give the high BTEs in the market, even as the firm is earning supernormal profits, potential entrants may be willing but would be unable to enter the markets. The incumbents are able to retain their supernormal profits. If a firm is earning normal profit in the short run, it will continue to earn normal profits in the long run. If a firm is earning subnormal profit in the short run, it will exit the market in the long run.	Analyse how the output and profit is determined in the short run. Explain how the high BTEs allow firms to retain their profits in the long run.
Requirement 2	Explain how a firm in a market with little or no BTEs would <u>only be able to achieve normal profits in the long run</u> An example of a market where there is low or no barriers to entry is the hawker food market. This is an example of monopolistic competition. In this market, firms are able to easily enter/exit the markets due to low BTEs given the low structural BTEs present such as the very low start up costs	Provide an example of the market and

whereby hawkers would only need to purchase their ingredients, apply for a rental hawker space which are not too costly. In addition, any statutory BTEs tend to be low as well as getting a license is cheap and not difficult.

The hawker food market is characterised by having many sellers as seen by the many hawker stalls all over Singapore each having little market share. The product is differentiated which can be observed from the variety of cuisines sold. This results in each firm having only a small price setting ability or market power represented by a price elastic demand curve.

Assume the firm is initially earning supernormal profits in the short run as seen from the diagram below. A profit-maximising firm will produce at Q_1 where $MC=MR_1$ with price P_1 . This would result in supernormal profit of P_1abC_1 .



The presence of supernormal profits would attract other firms to enter the market to compete for a share of the profits. As BTEs are low, the entrants can join the market and compete for market share. Incumbents' market share would decrease causing firm's demand to fall and become more price elastic due to the presence of more substitutes. This would continue until the firms only earn normal profit as seen at output Q_2 , where price, P_2 , is equal the average cost, C_2 . There is no longer any incentive for firms to enter the market and all firms would end up with normal profit in the long run.

focus on explaining the low BTEs in the context chosen.

Briefly explain the other characteristics.

Briefly explain how the output and profit is determined in the short run.

Explain how the low BTEs lead to the entry of firms and the long run adjustment to normal

		profits in the long run.
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LORMS

L3	- Answer is relevant and addresses both question requirements in a rigorous manner with the aid of relevant diagrams. - Examples of different markets should be utilised, including explaining the differing level of barriers to entry.	8 – 10
L2	- Answer is relevant but either only one requirement is addressed; or - Both requirements are addressed in an underdeveloped manner (i.e. incompletely explained) or lacking in rigour. - Answer utilizes examples in a cursory manner.	5 – 7
L1	- Answer is largely irrelevant and/or there are major content errors and/or gaps present in the analysis. - No examples are provided.	1 – 4

(b) Discuss whether increased competition in markets is beneficial for consumers and society. [15]

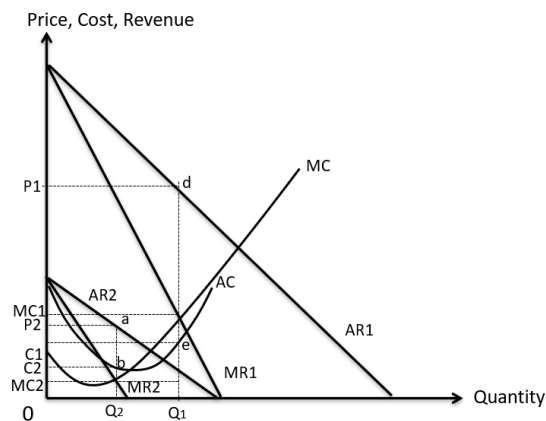
Question analysis

Command word	Discuss whether	Multiple perspectives required
Content	Increased competition (entry of firms), benefits and costs to consumers (price, quality, variety) and society (allocative efficiency, productive efficiency, dynamic efficiency and equity)	
Context	No specific context provided.	
Approach	Explain the benefits and costs to consumers and society when there is an increase in the level of competition in markets i.e. more firms have entered the markets.	

Introduction	An increase in the level of competition in the market arises from the entry of firms into the market. This has positive and negative impacts on consumers and society.	
Requirement 1	Increase in competition will lead to beneficial impacts on consumers and society	

Increase in competition will lead to lower prices and more variety for consumers while society will experience less allocative inefficiency and more productive efficiency from the firm's perspective.

An increase in competition would lead to more firms entering the market. Existing firms would experience a fall in their market shares and thus their demand. The demand becomes more price elastic due to the presence of more substitutes in the market. As seen in the diagram below, the firm's AR and MR will fall to AR2 and MR2. Profit-maximising firms will initially produce at Q1 where $MC=MR1$ and price will be P1, with a supernormal profit of $P1deC1$.



With the increase in competition, at Q1, MC is now above MR2 and firms can increase profits by reducing output. The new profit-max output will be at a lower output of Q2 with lower price, P2. Supernormal profits have also fallen to $P2abC2$.

The lower prices will benefit consumers in terms of lower prices and more variety. With prices falling, consumers are now able to afford more units of the good, thus improving their consumer welfare. In addition, having more firms creates variety for consumers. In the example of the hawker market, the entry of new firms would mean a greater variety of food options that can be purchased by consumers.

Allocative inefficiency would be reduced. Allocative efficiency is defined as a situation where the current

Analyse the direct effect on markets due to entry of firms.

Provide a diagram to support your analysis.

	combination of goods produced and sold gives the maximum satisfaction for each consumer at the current level of income. An allocative efficient outcome occurs when $P=MC$, where the value society places on the last unit of the good is equal the opportunity costs of resources used to produce that unit. Due to entry of firms, each firm now has lower market share and thus their market power has reduced. This means that the mark up of price over MC would decrease as firms have lower ability to set prices above MC. As seen in the above diagram, the mark up of $P1>MC1$ at $Q1$ has reduced to a smaller mark up of $P2>MC2$ at $Q2$. This means while there is still allocative inefficiency, the extent of the inefficiency has reduced with increased competition in the market. Lastly, productive efficiency from the firms perspective would improve as firm the increased competitions incentivises firms to reduce complacency and avoid waste of resources. This would mean the firm is more likely to produce on its LRAC.	Impacts should be connected to the “increased competition” experienced by markets.
Requirement 2	Increase in competition will lead to costly impacts on consumers and society Increased competition would negative impact consumers through stagnant or lower quality of goods and possibly higher prices. Society would be negatively affected by less dynamic efficiency and more productive inefficiency from society’s perspective. Dynamic efficiency is a situation in which firms are technologically progressive to meet the changing needs and wants of consumers over time. With the increased competition, dynamic efficiency may be affected as firms’ profits would fall. As shown in the diagram above, firms profits have fallen with the entry of new firms which reduces firms’ ability to conduct R&D to improve the quality of their products or lower the cost of production. This means there will be less dynamic efficiency in society. Consumers will also be negative affected as the lack of product innovation would affect the quality of goods and the lack of process innovation would affect the prices of the goods. These will negatively affect consumer welfare. In addition, due to the fall in output arising from increased competition, there will be more productive inefficiency from	Impacts should be connected to the “increased competition” experienced by markets.

	society's perspective. Firms are assumed to be producing along the downward sloping portion of their LRAC. With a fall in firms' output and scale of production, this may reduce the extent of internal economies of scale enjoyed by firms leading to higher average costs. This means that productive inefficiency has worsened from society's perspective as the society is productive efficient when firms produce at the minimum efficient scale of production. With rising average costs, this would mean firms could end up passing these higher costs to consumer in terms of higher prices which would reduce their consumer welfare.	
Conclusion	Overall, while consumers and society may have positive and negative impacts arising from the increased competition, whether consumers or society overall benefit depends on the following considerations: (1) Market Structure. If the increased competition happens in oligopolies, there would most likely be an overall benefit as there is still likely to be dynamic efficiency. While firms' profits may fall, firms still have a strong incentive to conduct R&D to maintain their market share. Also, they can tap on past supernormal profits that oligopolies are likely to have (as explained in part a) to finance the R&D. If the increased competition happens in monopolistic competition, consumers and society may not benefit overall due to the significant fall in dynamic efficiency as firms would not have much past profits to conduct R&D. In addition, the extent of the fall in price is likely to be larger in oligopolies when entrants successfully enter and obtain market share from incumbents as there would be a greater fall in market power by incumbents. This is in comparison to monopolistic competition where the entry of firms may only make a small impact on prices given the already large number of incumbents.	Conclusion should not be a summary of points discussed but should provide evaluative statements

	(2) Government Intervention. Governments may have other priorities such as ensuring the continued innovation in the economy. This means that there may be policies to support innovation in markets using subsidies. This means that even though increasing competition may reduce firms' profits, dynamic efficiency may not be effected much due to the support from the government. This means that consumers and society would benefit overall. Thus, in the case of an oligopolies in markets where governments want to support innovation, there is likely to be an overall benefit from increased competition.	
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LORMS

L3	• Answer is relevant and addresses both requirements, analysing the positive and negative impacts on consumers and society. • Analysis is rigorous and explanations are well elaborated, with relevant diagrams.	8 – 10
L2	• Answer is relevant but either only one requirement is addressed; or • Both requirements are addressed in an underdeveloped manner (i.e. incompletely explained) or lacking in rigour.	5 – 7
L1	Answer is largely irrelevant and/or there are major content errors and/or gaps present in the analysis.	1 – 4

E3	Two well-explained evaluative judgments about both requirements plus an overall summative conclusion.	5
E2	Two well-explained evaluative judgments about both requirements	3 – 4
E1	A well-explained evaluative judgment about 1 requirement	1 – 2

3.	(a)	Explain two reasons why rational decision-making by consumers may not always result in efficient outcomes. [10]
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	(b)	Discuss the extent to which the effectiveness of the policy is the most important consideration in influencing policy choice to achieve efficiency. [15]
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Part (a)

Question analysis

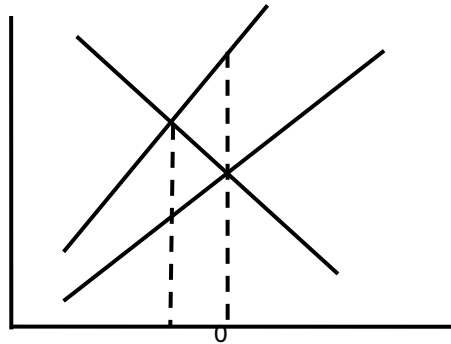
Command word	Explain	Explain using economic reasonings
Content	two reasons ... rational decision-making by consumers - > inefficient outcome	Sources of market failure Pte Optimum ($MPB = MPC$) is not equal to Social Optimum ($MSB = MSC$) -> Deadweight loss
Context	No specific context	From consumers' POV
Approach	Explain one source of market failure at a time. No flipped explanation – e.g. positive and negative externalities – same analysis	

Suggested answer

Introduction	Explain what is meant by rational decision-making by consumers and efficient outcomes. • Rational and incentive-driven consumers, with the aim to maximise their personal welfare, will consume a good / service at the private optimum point where $MPC = MPB$, i.e. the last unit of the good / service consumed adds as much to the consumers' benefit as it does to consumers' cost. Any variation in consumption will reduce their utility level. • Efficiency is achieved when the society consume a good/service at the social optimum point where $MSC = MSB$, i.e. the last unit of the good / service consumed add as much to the society' benefit as it does to society's cost. Any variation in consumption will reduce the social welfare level.	Define
Body	<u>Development:</u> Explain two reasons why rational decision-making by the consumers may not always lead to efficient outcome [i.e. to explain why achieving private optimum pt does not lead to social optimum point. In essence, it is because the conditions of a perfect	Overview

	market are not met, e.g. there is imperfect information (be it asymmetric, incomplete or inaccurate), generation of positive and negative externalities in consumption or the existence of public goods [i.e. due to the various causes of market failure.] <u>Requirement #1: [P] Rational consumer decision-making in the case of public goods will not lead to efficient outcome.</u> [E&E] • Using the example of a public good, e.g. national defence, explain how public goods exhibit the characteristics of non-excludability, non-rivalry and non-rejectable in consumption. • Using the example of National defence as a pure public good because it exhibits non-rivalry, non-excludability, and non-rejectability. It is non-rival since one citizen's protection from foreign invasion does not reduce the level of protection available to others. It is non-excludable because once defence forces are deployed, all residents benefit from the same deterrence regardless of whether they have contributed financially. It is also non-rejectable, as individuals cannot opt out of the protection provided — for instance, a citizen continues to benefit from national defence even if they would prefer not to. These characteristics together give rise to the free-rider problem. Since people cannot be excluded, non-payers are still able to enjoy the protection funded by payers. Moreover, because defence is non-rival, additional non-payers can continue to benefit without reducing the protection enjoyed by others, making it rational for individuals to withhold payment. As a result, private demand is not expressed ($MPB = 0$), and firms rationally choose not to supply the good, leading to a missing market. Efficiency, however, requires provision at a positive level where $MSC = MSB > 0$, since national defence yields significant social benefits essential to stability and security, while rational decision-making leads to under-provision (zero output)	Point Explain & Exemplify Link
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	[L] Hence conclude that rational decision-making by consumers (at zero output) does not result in efficient outcome (at output > 0) for public goods,	
	<u>Requirement #2: [P] Rational consumer decision-making, in the case of goods that incur externalities in consumption, will not lead to efficient outcome.</u>	Point
	[E&E] • Rational consumer decision-making in the case of goods that generate negative externalities may fail to produce an efficient outcome. Take driving as an example. For drivers, the marginal private cost (MPC) of driving is the private expenses such as fuel and maintenance, due to the additional unit of car usage, while the marginal private benefit (MPB) is the value that they place on their utility in terms of comfort, speed and convenience from the additional unit of car usage. Rational consumers will consume at the private optimum level, where $MPC = MPB$, which can be illustrated on figure 1 as quantity Q_p. • However, every additional unit of car usage generates negative externalities such as traffic congestion and air pollution, which increase travel times for others, reduce productivity for firms located in congested areas, and raise healthcare costs for pedestrians and residents. These effects incur additional costs to third parties, are not considered by individual drivers, meaning that they ignore the marginal external cost (MEC) associated with their actions. Consequently, while the private decision maximises individual welfare, it does not account for the broader societal cost. • To achieve an efficient outcome, society must take these external costs into account when deciding the optimal level of driving. The socially optimal quantity occurs where marginal social cost (MSC) = marginal social benefit (MSB). Here, $MSC = MPC + MEC$, and assuming the marginal external benefit (MEB) = 0, $MSB = MPB$. In figure 1, the intersection of MSC and MSB occurs at Q_s, which is less than Q_p. Because $MEC > 0$, $MPC < MSC$ at Q_p, meaning rational consumers allocate more resources to driving than is socially optimal.	Explain



Quantity
MPC
 Q_s Q_p
 $MSC = MPC + MEC$
 c
 a
 b
Cost, Benefit (\$)
 $MPB = MSB$
(assume $MEB = 0$)

Figure 1: Over-consumption of goods with negative externalities

[L] Hence, rational decision-making by consumers fails to produce an efficient outcome when the consumption of a good generates externalities, whether positive or negative, because private choices do not account for costs or benefits imposed on society.

Requirement #3: Rational consumer decision-making, in the case of goods that the consumer is unable to gather perfect information on the actual benefits/costs, will not lead to efficient outcome.

[E&E]
Rational consumer decision-making may fail to produce an efficient outcome when consumers are unable to gather perfect information on the actual benefits or costs of a good. Take health-screening as an example. Consumers make decisions based on their perceived marginal private benefit ($MPB_{perceived}$) and perceived marginal private cost ($MPC_{perceived}$). $MPB_{perceived}$ could be the

Point

Explain & Exemplify

projected reduction in treatment cost due to early detection of chronic illnesses while $MPC_{perceived}$ could include the explicit cost (e.g. the price of the health screening package) and the implicit cost (e.g. the forgone income when the individual takes time away from work). Rational consumers will consume up to the point where $MPB_{perceived} = MPC_{perceived}$, which can be illustrated on a Figure 2 as the private optimum quantity $Q_p_{perceived}$.

However, the socially optimal level of consumption occurs where marginal social cost (MSC) = marginal social benefit (MSB). When consumers underestimate the benefits of consuming the good due to imperfect information, their $MPB_{perceived} < MSB$, leading to under-consumption relative to the socially optimal level, Q_s . In figure 2, the underestimated benefits is illustrated as a divergence between the $MPB_{perceived}$ and MSB curves.

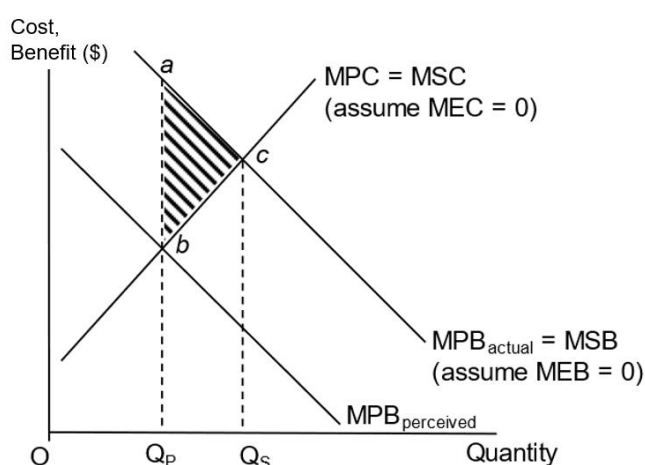


Figure 2: Under-consumption arising from imperfect information

[L] As a result, rational decision-making based on imperfect information causes the private quantity consumed to deviate from the socially optimal quantity. Hence, when consumers lack perfect information, their decisions do not achieve efficiency, and government intervention is necessary to allocate resources at the socially optimal level where $MSC = MSB$.

Link

LORMS

L3	Answer is relevant and both reasons are well-explained with detailed economic analysis of why	8 – 10
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	rational decision-making by consumers may not always result in efficient outcomes	
L2	Answer is relevant and both factors are explained, although there may be minor errors and/or gaps in analysis.	5 – 7
L1	Answer is largely irrelevant (e.g. student may not explain the sources of market failure) and/or there are major content errors and/or gaps present in the analysis.	1 – 4

Part (b)

Question analysis

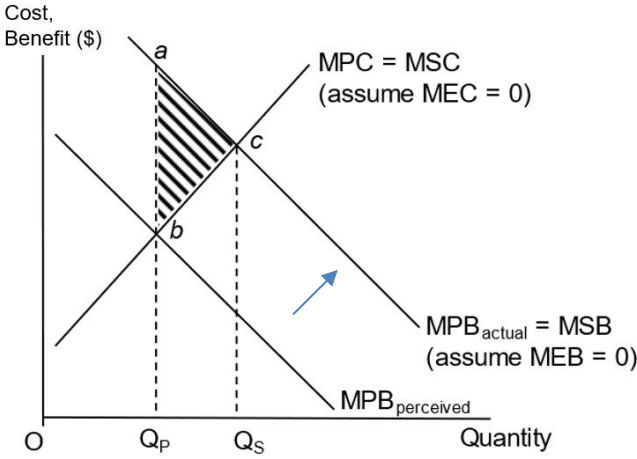
Discuss the extent to which the effectiveness of the policy is the most important consideration in influencing policy choice to achieve efficiency

Command word	Discuss the extent to which	Multiple perspectives
Content	Effectiveness .. the most important factor .. when deciding on the policy to adopt to achieve efficiency	The factors that the govt has to consider when deciding on the policy to adopt to correct the market failure to achieve efficiency social optimum point (where $MSB = MSC$) • Effectiveness • Feasibility • Root cause • Unintended Consequences • Time Horizon
Context	No specific context	Can use the context from part (a)
Approach	• R1: Explain why effectiveness of the policy is an important consideration in influencing policy choice to achieve efficiency • R2: Explain why other factors such as root cause, feasibility and unintended consequences are also important considerations in influencing policy choice to achieve efficiency. • Evaluation: Make a judgement on the extent to which the effectiveness of the policy is the most important consideration in influencing policy choice to achieve efficiency	

Suggested answer

Introduction	When making policy choices to achieve efficiency, governments consider various criteria. While the effectiveness of a policy is often viewed as the most	Overview
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	important factor, other considerations such as feasibility, unintended consequences may also play a significant role.	
Thesis	<u>Requirement #1: Effectiveness of the policy is an important consideration in influencing policy choice to achieve efficiency</u> [P] Effectiveness of the policy is an important consideration in influencing policy choice because it determines whether the policy can achieve its intended objectives, which in this case is to achieve efficiency. If ineffective, it defeats the purpose of adopting the policy. [E&E] For example, Underconsumption of vaccinations may arise from imperfect information, where individuals' perceived benefits of vaccination are lower than the actual benefits, or they overestimate the risks. While public education campaigns can raise awareness and correct these misperceptions, narrowing the gap between perceived and actual benefits, such campaigns often take a long time to achieve results. In urgent situations, such as the Covid-19 pandemic, governments may instead provide vaccinations free of charge and make them compulsory. This policy is more effective because it ensures immediate and widespread uptake, directly increasing consumption to the socially optimal level and effectively correcting the market failure. By comparing multiple appropriate policies, governments will select the one that is most effective in aligning perceived benefits with actual benefits and achieving allocative efficiency, demonstrating why effectiveness is a key consideration in policy choice.	Point Explain

	 Figure 3: Public education to address under-consumption arising from imperfect information • [L] Effectiveness of the policy is hence an important consideration in influencing policy choice to achieve efficiency	
Anti-thesis 1	<u>Requirement #2: Explain feasibility is also important considerations in influencing policy choice to achieve efficiency.</u> [P] Beyond effectiveness, there are other factors that need to be considered when deciding on the policy options. Using the same example on vaccination, Feasibility: Effectiveness may not always be the key consideration. While compulsory vaccination is highly effective, it may not be feasible due to the high administrative, monitoring, and enforcement costs, which require substantial government funding. If sufficient funds are not available, implementing compulsory vaccination may be impossible without diverting resources from other essential services, creating a significant opportunity cost. For example, funds used for enforcing compulsory vaccination could otherwise be spent on healthcare infrastructure, education, or other public health initiatives. In comparison, indirect subsidies on vaccinations may be less effective in increasing uptake since it is not compulsory, but they are far more feasible to administer, require less funding, and are easier to implement on a large scale, making them a more practical policy option when resources are limited.	

	[L]: Feasibility of the policy is hence an important consideration in influencing policy choice to achieve efficiency.	
Anti-thesis 2	<u>Requirement #3: Explain unintended consequences is also important considerations in influencing policy choice to achieve efficiency.</u> [P] Beyond effectiveness and feasibility, the unintended consequences also need to be considered when deciding on the policy options. Again, using the same example on vaccination, Unintended Consequence: Effectiveness may also be limited by the risk of unintended consequences. Compulsory vaccination, although highly effective in increasing immediate uptake, may provoke strong public resistance, reduce trust in the government, and undermine voluntary compliance in other health programs, such as annual flu vaccination campaigns or childhood immunisation programs. It may also raise ethical concerns over individual rights, which could erode long-term cooperation and support for public health initiatives. In contrast, indirect subsidies, while less effective at achieving immediate uptake, avoid these negative side effects and are more socially acceptable. This demonstrates that policymakers must consider unintended consequences—not just effectiveness—when choosing a policy, as a policy that is highly effective in the short term may create negative outcomes that reduce overall social welfare. [L]: The unintended consequences of the policy is hence an important consideration in influencing policy choice to achieve efficiency.	
Synthesis	[Stand] Effectiveness is an important consideration in influencing a govt's policy choice. However, it <u>may not be most important</u> as there are other criteria to meet when deciding on the best policy option to resolve the problem. [Substantiations] • The extent to which the effectiveness of the policy is the most important consideration depends on the govt's assessment on which criterion to <u>prioritise</u>. This may differ across and within countries depending on its characteristics, economic conditions and constraints.	Criteria 1: Priority

	○ If the govt has a high budget deficit, knowing the effectiveness may not be the most important factor in deciding on the policy to adopt. If the policy is not feasible due to financial constraint, it cannot be implemented even if it is deemed to be effective. If there is no constraint, then effectiveness will probably be most important in making a policy option/ ○ If the govt's assessment is such that the costs of a policy will exceed its benefits, it is not worth implementing it even if it is effective as the issues created may lead to bigger problems. Hence the govt may have to choose alternatives even if it may not be the most effective solution. For example, flexible school and working hours is the most effective in reducing traffic congestion. But such a system and structure can only be changed over a long period of time (time frame) as it requires a change in mind set (feasibility) and may disrupt business operations (consequences). Hence setting ERP rates may be the next best option as it diverts commuters to take public transport hence reducing traffic congestion. ● There is often more than one option that can effectively correct a market failure. <u>Hence</u>, there is a need to choose the most effective and feasible option with the least consequences and can work within the time constraint.	Criteria 2: Costs-Benefit analysis [Synergy]
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LORMS

L3	The answer is relevant. The importance of effectiveness, along with at least one other criterion, is clearly explained and well supported with economic analysis to show why they are important considerations for the government when deciding whether on the policy to adopt. Diagrams are used appropriately (where relevant), and points are substantiated with real-world examples.	8 – 10
L2	Explains only policy effectiveness or one other criterion, with clear economic analysis of its importance in government decision-making. If two criteria are included, explanations lack clarity. Diagrams may be inaccurate, and points may not be well supported with real-world examples.	5 – 7
L1	Answer is largely irrelevant or contain significant conceptual errors.	1 – 4
E3	Two well-explained evaluative judgments about both criteria plus an overall summative conclusion.	5

E2	Two well-explained evaluative judgments about both criteria	3 – 4
E1	A well-explained evaluative judgment about 1 criteria	1 – 2

4.	(a)	Explain the domestic and international factors that give rise to a balance of trade deficit. [10]
	(b)	Discuss the extent to which currency depreciation is the best way for a government to correct a balance of trade deficit. [15]

Part (a)

Question analysis

Command word	Explain	Explain in detail
Content	Factors... give rise to a balance of trade deficit	Causes of a balance of trade deficit
Context	No specific context	
Approach	Explain one internal and one external reason why a country may suffer from a balance of trade deficit.	

Suggested answer

Introduction	A balance of trade (BOT) deficit occurs when the revenue received from exporting goods and services (X) is less than the import expenditure on goods and services (M). This can be a result of both domestic (reasons within an economy) as well as international factors (reasons outside of an economy).	Define Overview
Body	<u>Requirement #1: A domestic factor that resulted in a balance of trade deficit</u> One domestic factor that could have contributed to a BOT deficit is relatively higher domestic inflation rates. Assuming that a country is experiencing a high rate of inflation while the other countries have a zero rate of inflation, this increases the prices of the goods and	Point Explain

	services produced in the country in both absolute and relative terms. Further assuming demand for the country's exports to be price elastic, an increase in export prices will bring about a more than proportionate fall in quantity demanded, reducing the export revenue (X). Assuming imports and domestically-produced goods and services to be substitutes, an increase in the prices of domestically-produced goods and services will induce locals to switch to imports, causing an increase in demand for imports and hence import spending (M). For example, Türkiye experienced very high inflation in late 2022, peaking above 80% year on year. Prices of domestically produced goods rose sharply, leading to exporters struggling to price their goods competitively on global markets. At the same time, domestic households switched to imported goods, especially energy, raw materials and consumer durables. The simultaneous decrease in X and increase in M could result in a BOT deficit assuming that the BOT was initially balanced ($X=M$). In 2022, Türkiye's BOT deficit ballooned to around USD 110 billion, one of the highest on record.	Example Link
	<u>Requirement #2: A international factor that resulted in a balance of trade deficit</u> One international factor that could have contributed to a BOT deficit is a loss in comparative advantage to trading partners. With the emergence of low-cost competitors, a country might face a fall in demand for its exports as foreign consumers switch to goods produced by its low-cost competitors. The closer the substitutability, the larger will be the decline in export revenue. Simultaneously, as import prices fall (now that cheaper imports are made available), quantity demanded for imports increase. Assuming demand for imports to be price elastic, the reduction in import prices will bring about a more than proportionate increase in quantity demanded for imports, causing import spending to rise.	Point Explain

	For example, in recent years China's export competitiveness has been eroded by low-cost competitors, mainly in Southeast Asia and South Asia. With their relatively larger pools of cheaper, low-skilled labour, this gives countries such as Vietnam and Bangladesh a comparative advantage in producing labour-intensive manufactured goods, such as garments, footwear, toys and simple electronics. The simultaneous decrease in X and increase in M could result in a BOT deficit assuming that the BOT was initially balanced ($X=M$). Indeed, China's share of global apparel exports have fallen while that of Vietnam's has increased. China is no longer 'the world's factory' – this dubious title may now belong to countries in Southeast Asia, a "new manufacturing frontier" for labour-intensive goods. <i>Note: Depending on how students phrase their answer, the loss of comparative advantage can be reframed as a domestic factor.</i>	Example Link
Conclusion	In summary, a country's BOT deficit may be a result of both domestic as well as international factors. When a country's BOT deficit is large and persistent, there may be a need for the government to implement policies to reduce this deficit, such as protectionism. This will be further explored in part (b)	Link to part (b)

Note: Other acceptable answers include: domestic factors – domestic currency appreciation; international factors – change in foreign income, change in foreign taste and preferences, foreign protectionistic measures

LORMS

L3	Answer is relevant and both factors are well-explained with detailed economic analysis how it may contribute to a country's balance of trade deficit.	8 – 10
L2	Answer is relevant and both factors are explained, although there may be minor errors and/or gaps in analysis.	5 – 7
L1	Answer is largely irrelevant (e.g. student may have explained the consequences of a BOT deficit rather than its causes) and/or there are major content errors and/or gaps present in the analysis.	1 – 4

Part (b)

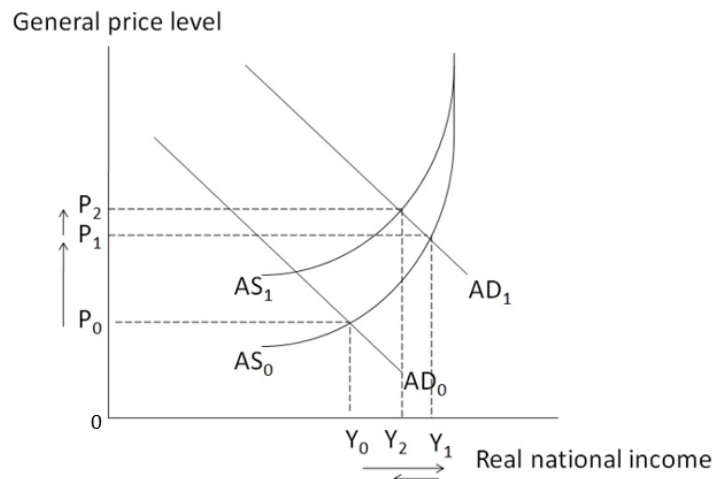
Question analysis

Command word	Discuss the extent to which	Multiple perspectives
Content	Engaging in currency depreciation... best way...	Policies to reduce a balance of trade deficit: • Currency depreciation • Other expenditure-switching policies besides depreciation (e.g. protectionism, supply-side measures) • Expenditure-reducing policies
Context	No specific context	
Approach	Explain at least two policies (including currency depreciation) that can reduce a country's BOT deficit and their limitations, before comparing which policy is best according to a specified criteria.	

Suggested answer

Introduction	When a country's BOT deficit is large and persistent, governments may be pressured to take action using expenditure-switching policies such as currency depreciation and supply-side measures, as well as expenditure-reducing policies such as contractionary fiscal policy. These policies will be examined in terms of their effectiveness in reducing the BOT deficit, as well as their limitations, before being compared to see which policy is best.	Overview
Thesis	<u>Requirement #1: Currency depreciation and its limitations</u> <u>Thesis: Currency depreciation is a good way to reduce a BOT deficit</u> Countries may consider engaging in currency depreciation to encourage both domestic and foreign consumers to switch to consuming domestically produced goods and services. This can increase X and reduce M and therefore the BOT deficit. As the domestic currency weakens against foreign currencies, prices of the country's exports fall in foreign currency terms while prices of imports rise in domestic	Point Explain

currency terms, causing the quantity demanded for the country's exports to rise and the quantity demanded of imports into the country to fall, the extent to which depends on the relevant price elasticity of demand. Assuming Marshall-Lerner condition holds, i.e. $|PED_X| + |PED_M| > 1$, the price changes in exports and imports will induce sufficiently large changes in quantity demanded in the opposite direction to cause TR_X to increase relative to TE_M . Ceteris paribus, this brings about an improvement in the country's trade balance.



Diagram

For much of the 2000s, China intervened heavily in the foreign exchange market to keep the renminbi (RMB, or yuan) undervalued against the US dollar. The People's Bank of China did this by buying large amounts of foreign currency (mainly USD) and selling RMB, which prevented the yuan from appreciating despite China's huge trade surpluses and capital inflows. As a result, Chinese exports remained cheaper on world markets than they would have been if the RMB had been allowed to float freely. This helped China's exports surge, contributing to its rapid economic growth and its emergence as the world's largest exporter.

Example

Anti-thesis
1

Anti-thesis 1: Currency depreciation is not a good way to reduce a BOT deficit

However, currency depreciation will result in import prices rising in domestic currency terms. For countries that are heavily reliant on imported factors of production, this results in higher unit cost of production, shifting AS curve upwards from AS_0 to AS_1 . The rising unit cost of production puts a squeeze on firms' profits. Firms respond to the higher unit cost of production by

Limitation 1:
Imported
cost-push
inflation

	partly decreasing output and partly increasing price of final goods and services to protect their profits. There is hence a trade-off with other macroeconomic goals – as BOT improves, this could be at the expense of goals such as price stability as prices first increase from P0 to P1, then to P2. Once inflation sets in, exports will once again be made more expensive and imports relatively cheaper, thus defeating the original aim of devaluation. Effectiveness of this policy could be undermined by retaliation from trading partners as they also seek to depreciate their currency. In extreme situations, this could result in many rounds of competitive depreciation. As trading partners engage in currency depreciation, this would make domestic exports relatively more expensive in foreign currency, reducing the demand for domestic exports once more and reducing export revenue received.	Limitation 2: Competitive depreciation
Anti-thesis 2	<u>Requirement #2: Other policies and their limitations</u> <u>Anti-thesis 2: Other policies may be better in reducing the BOT deficit</u> It may be better to address the root cause of the persistent BOT deficit through policies such as supply-side measures to increase the price and non-price competitiveness of exports. This can be done via increasing home productivity through R&D, improvement in technology, training and infrastructure development, etc to lower unit cost of production, allowing domestic producers to reduce their prices. Supply-side policies such as financing R&D can bring about both process and product innovation. Process innovation can help to lower unit cost of production as efficiency of production process improves with the discovery of newer methods of production which may require fewer inputs – this would help to increase AS; as unit cost of production falls, producers under competitive pressure will pass on a part of this fall in unit cost of production to consumers in the form of lower prices. Hence, the price of both domestically-consumed goods, as well as goods meant to be exported, falls. Assuming the demand for	Point – Supply-side policies Explain

	exports is price elastic, this fall in export price will lead to a more than proportionate increase in quantity demanded, thereby increasing export revenue. Further assuming that domestically produced goods and imports are substitutes, the fall in prices domestically will cause domestic consumers to turn away from foreign imports, thereby reducing its demand and import expenditure. Product innovation, on the other hand, results in improved quality of exports or even the development of new product types to better cater to consumers' taste and preference, thereby opening up new markets. As demand for X rises, ceteris paribus, so does export revenue. For example, Singapore heavily relies on supply-side measures such as infrastructure development to develop and maintain our areas of comparative advantage. The government has provided infrastructure, for example the development of the Biopolis and the Tuas Biomedical Park and accompanying this were tax breaks and business incentives to attract foreign direct investments and R&D in the pharmaceutical sector. The higher level of investment will allow greater utilisation of new medical and production technologies which will help to lower opportunity cost in production and thus allow Singapore to gain CA in this area. By creating biomedical and pharma 'hubs', these sectors can also reap economies of scale through larger output, and which will further enhance CA in such products. This can help improve both the price and non-price competitiveness of our exports and reduce any BOT deficit.	Example
	However, the effects of these measures may take time to develop and therefore such policies are not intended as a quick fix to a country's persistent BOT deficit. Furthermore, the effectiveness of these measures are also by no means certain; funding it may also prove to be costly for the government, incurring opportunity cost in terms of having to forgo spending in other areas of national development.	Limitations
	A quicker solution to reduce a country's BOT deficit could be expenditure-reducing policies such as contractionary fiscal policy.	Point

	The government may cut back on its spending (reduce G) or raise direct taxes such as personal income and corporate taxes, which serves to reduce private consumption (C) and investment (I) respectively. By reducing AD and national income, there is a decline in import expenditure. Furthermore, when the underlying cause of the trade deficit is a high relative inflation rate, contractionary demand-management policies address the root cause by bringing down domestic inflation rate. As these policies reduce the general price level, there is a reduction in export prices. Assuming export demand is price elastic, it results in a more than proportionate increase in the quantity demanded of exports. As the same time, the fall in the general price level in the home country induces a switch from imports to domestically produced substitutes. With export revenue increasing and import expenditure falling, the BOT position improves.	Explain Link
	However, if a country has yet to achieve full employment, adopting contractionary policies may correct the trade deficit but lead to negative actual growth, as well as worsen the unemployment situation as the economy moves further away from full-employment output. There is hence a trade-off in macroeconomic objectives between a favorable balance of trade and ensuring economic growth and low unemployment.	Limitations
Synthesis	[Stand] Currency depreciation is <u>not</u> the best way to address a balance of trade deficit. [Substantiation] It does not tackle the root cause of a BOT deficit but merely serves to manage its symptoms by artificially giving domestically produced goods a price advantage. The other negative consequences mentioned above (the possibility of retaliation and imported cost-push inflationary effects) will increase in significance the longer currency depreciation is implemented. Governments need to realise that currency depreciation is only a second-best solution used to buy time for other policies to take effect. If the root cause of the BOT deficit is high domestic inflation rates, governments can consider contractionary	Criteria 1: Root cause Criteria 2: Time frame Play down limitations

	demand-management policies without being worried about its trade-offs with economic growth and employment. If the root cause of the BOT deficit is due to a permanent loss in export competitiveness, then governments are better-served exploring supply-side measures to regain competitiveness, which is unlikely to be objectionable since it does not “unfairly” disadvantage any other country in the process.	of alternative policies
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LORMS

L3	Answer is relevant. Both policies are explained thoroughly and supported with economic analysis in terms of how it can be used to close a country's BOT deficit. There is good use of diagrams (where relevant) and points are supported with real-world examples.	8 – 10
L2	Answer is relevant, although only one policy may be explained thoroughly and supported with economic analysis in terms of how it can be used to close a country's BOT deficit. The other policy may not have been developed in detail. Only one policy explained thoroughly (i.e. how policy works and its limitations) – A + 0 = L2 – 6m Two policies explained, but not thorough (i.e. how policies work but no limitations) – C + C = L2 – 6m/7m (max)	5 – 7
L1	Answer is largely irrelevant or contain significant conceptual errors.	1 – 4

E3	Two well-explained evaluative judgments about both policies plus a overall summative conclusion.	5
E2	Two well-explained evaluative judgments about both policies	3 – 4
E1	A well-explained evaluative judgment about 1 policy	1 – 2

H2 Prelim Essay Question 5

5. In 2022, United States' (US) gross domestic product (GDP) at current prices was US\$26.1 trillion with a total population of 333.3 million and the inflation rate (as measured by the consumer price index) was 6.5%. Overall unemployment fell to 3.6%.

(a) Explain how trade-offs may arise when the US central bank changes its interest rate to achieve its macroeconomic goals. [10]

(b) Assess the usefulness of the above statistics in comparing the United States' standard of living with that of other economies. [15]

Question analysis

Command word	Explain how	Explain using economic analy
Content	• Trade-offs • Impact of changes in interest rate	
Context	US	
Approach	Explain at least two trade-offs which may occur when given a change in i/r.	

Suggested answer

Introduction	The use of policies such as monetary policy via changes in interest rates to pursue macroeconomic goals may lead to trade-offs for the US economy.	Overview
Body	<i>Analyse at least <u>two</u> instances where trade-offs occur</i> <u>Requirement #1: Pursuing growth may lead to a worsening balance of trade.</u> The US economy may lower its interest rates in the pursuit of economic growth and lower unemployment. This is done through an expansionary approach by lowering interest rates. With lower interest rates, the cost of borrowing for consumers falls leading to greater borrowing to purchase big-ticket items. This increases Cd. Additionally, lower interest rates would mean that the lower borrowing costs would increase the net expected rate of returns on investments, leading to a rise in I.	Explain how changes in i/r helps the US achieves it macro goal

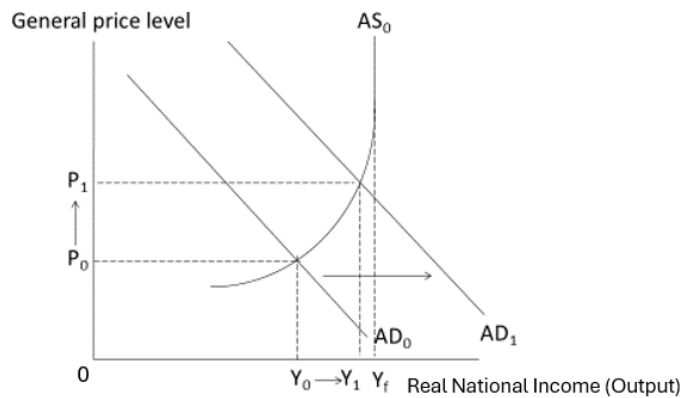


Diagram to illustrate the analysis

Since C and I are components of AD, this will cause AD to rise. The economy is initially operating with spare capacity with initial real national output Y_0 , below the full employment level of national income Y_f .

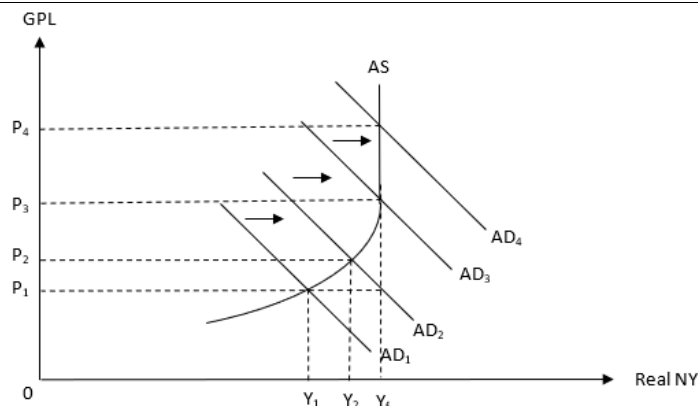
As AD increases, *ceteris paribus*, firms will have to draw down inventories to meet the unanticipated increase in demand. The unplanned disinvestment signals to firms to increase output in the next production cycle so as to restore their inventories to the optimal level and, in so doing, demand more factor inputs (including labour) and paying out more factor income. As national income rises, income-induced consumption (C_d) increases, causing another round of increase in AD, setting off the multiplier effect where additional spending creates additional income which induces more spending. At each successive round, the increase in income-induced consumption gets smaller because of the leakages in the form of saving, taxes and imports. Eventually the multiplier process will end and a new equilibrium national income is attained when $\Delta J = \Delta W$. In the diagram, a rightward shift of AD from AD_0 to AD_1 leads to an increase in real NY from Y_0 to Y_1 , moving closer to the full employment level Y_f , *ceteris paribus*. This is actual growth where real national output has risen. This also lowers demand-deficient unemployment as the derived demand for labour has increased.

However, due to a rise in national income, households will also increase their demand for imports, assuming the imports are normal goods (i.e. $YED > 0$). M increases and assuming US economy's BOT is initially balanced ($X=M$), this would cause the BOT to go into a deficit.

Assumption of state of economy (there should be some spare capacity)

Provide a detailed analysis of the multiplier process.

		Link to the macro goal e.g. actual growth and lower UnE Explain how the trade-offs occur. Provide assumptions e.g. YED, initial BOT
	<u>Requirement #2: Pursuing growth may lead to demand-pull inflation.</u> Assuming the economy is near full employment, the use of lowered interest rates may cause demand-pull inflation. Demand-pull inflation occurs when aggregate demand persistently exceeds aggregate supply when the economy is near or at full employment, causing upward pressure on prices. As AD increases from AD1 to AD2, firms enter the factor market to demand for more factors of production to increase their production. Holding the supply of factors of production constant, the increased competition for factors of production bids up factor prices. This increases the unit cost of production and firms, to protect their profits, pass on part of the higher costs to buyers by raising prices of final goods and services.	If related to the same macro goals pursued, you may proceed to the other trade-offs Analysis of dd-pull inflation should differ from that of actual growth



If the US government were to continue to lower its interest rates, holding AS constant, the further increase in AD is accompanied by an increase in the general price level from P_2 to P_3 even while real national income increases from Y_1 to Y_2 , towards the full employment level of Y_f . Demand-pull inflation worsens as the economy approaches full employment. If AD continues to increase, e.g. from AD_2 to AD_3 and further to AD_4 , in the absence of available spare capacity, the shortage created can no longer be met by increase in production. The economy adjusts to a new equilibrium fully through increase in the general price level (to P_4), without any increase in real national income which remains at the maximum level of Y_f . The economy experiences demand-pull inflation.

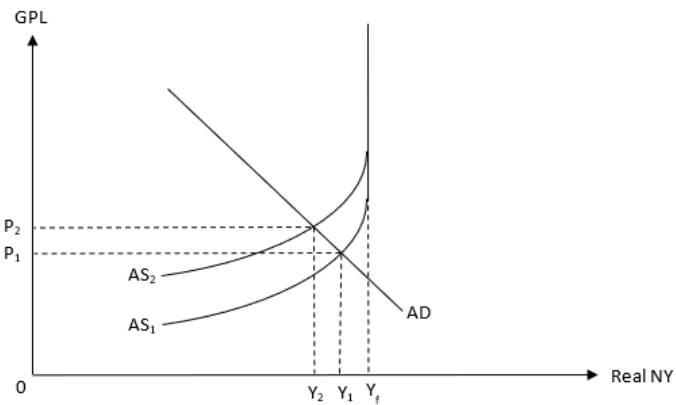
Link to the trade off

Requirement #3: Pursuing growth may lead to imported inflation (or exchange rate instability)

The pursuit of growth may also result in imported inflation. With lower interest rates, this would attract hot money outflows from the US due (or reduced hot money inflows into the US). This would cause the supply of USD to increase (or the demand for USD to fall) resulting in a downward pressure on the USD in the foreign exchange market. Assuming a free-floating exchange rate system in the US, this would cause the USD to depreciate over time which causes exchange rate instability.

A problem with the depreciation of the USD is that it may result in imported inflation. A weaker USD means that the price of imported factor inputs is now more expensive in USD terms. More USD would have to be exchanged to purchase the factor

Provide assumptions e.g. free-floating

	inputs. This would cause the unit cost of production in the economy to rise leading to its AS to fall i.e. shifting upwards from AS₁ to AS₂.  Firms respond to the higher unit cost by partly decreasing output and partly increasing price of final goods and services to protect their profits. Overall, the general price level rises from P₁ to P₂ as the US experiences imported inflation.	exchange rate system Be clear when explaining the change in price to state the currency used. Link to trade off.
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LORMS

L3	Answer is relevant and addresses question requirements (two cases trade-offs occur) in a rigorous manner with the aid of relevant diagrams.	8 – 10
L2	- Answer is relevant but either only one requirement is addressed (only one trade-off is explained); or - Both requirements are addressed in an underdeveloped manner (i.e. incompletely explained) or lacking in rigour.	5 – 7
L1	Answer is largely irrelevant and/or there are major content errors and/or gaps present in the analysis.	1 – 4

(b) Assess the usefulness of the above statistics in comparing the United States' standard of living with that of other economies. [15]

Question analysis

Command word	Assess	Use of economic analysis to consider multiple perspectives
Content	- Economic data (GDP at current prices, population size, inflation rate, unemployment rate) - Comparison of SOL over space	
Context	US	
Approach	Discuss the usefulness of the provided data is comparing the US SOL with other countries. R1: How the data could be used to compare SOL with other countries R2: The limitations of the data. There should be a conclusion that responds to the question intent.	

Suggested answer

Introduction	Standard of living (SOL) refers to the level of economic welfare and social well-being of an individual or household. It includes the quantitative (material) and qualitative (non-material) aspects. The material standard of living is affected by the amount of goods and services that individuals within the country have available for consumption from which they derive utility. Non-material aspects of living standards will involve indicators like the amount of leisure people consume, life expectancy, standard of education, absence of pollution, low crime rates and other social factors.	
Requirement 1	R1: Explain the usefulness of the data provided <u>Using GDP (and population size) to compare SOL</u> The US GDP data could be used to compare SOL between US and other countries. GDP measures the total value of all final goods and services newly produced within the geographical boundary of a country in a given year before allowance for depreciation. Given the GDP in current prices which is in nominal terms and the population size, the US would have a nominal GDP per capita of around	

USD\$78,307. When comparing this with another country's data in a common currency using market exchange rates, this would allow us to compare the countries SOL. Assuming US has a higher nominal GDP per capita, this would suggest that US has a higher SOL than the other country. On average each individual in the US would have a greater ability to purchase goods and services which suggests that the quantity of goods and services and utility enjoyed would be greater, suggesting a higher material SOL.

Having the data in per capita terms is important when comparing SOL as a higher GDP (not in per capita terms) in one country compared to another may not necessarily mean a higher standard of living in the former if its population is proportionately larger, since the goods and services produced have to be shared out among more people. To compare the goods and services each person has on average available from which to derive utility, per capita GDP figures needs to be computed for the various countries.

Using unemployment rate to compare SOL

Unemployment rate measures the number of unemployed persons as a percentage of the labour force. The US has an unemployment rate of 3.6%. The country with a lower unemployment rate, c.p., would have a higher SOL. For example, if the US has a lower unemployment rate than the other country, this suggest that a smaller proportion of the country's labour force is unemployed. This means that there is a greater proportion of the labour force in the US compared to the other country that are employed and are earning an income to allow them to consume goods and services which suggests a higher material SOL. Additionally, with lower unemployment rates, this means that US has proportionally less of its labour force who may be stressed about being unemployed which could affect their mental wellbeing, and thus US may have higher non-material SOL.

Using inflation rate to compare SOL

The inflation rate shows the percentage increase in an economy's general price level. The US inflation rate is 6.5%. A country with a lower inflation rate would only have a higher standard of living (SOL) if both countries started from the same price and income levels in the previous year. In that case, if the US experiences a lower inflation rate than another country, it means prices in the US have risen more slowly. Assuming incomes remain the same, this would result in a relatively higher purchasing power

	in the US, and thus a relatively higher material SOL compared to the other country.	
Requirement 2	R2: Explain the limitations of the data provided <u>Limitations of GDP data</u> (key limitation about differences in purchasing power should be explained) Using nominal GDP per capita still has its limitation when comparing SOL across countries. Two issues are that the purchasing power differences and the differences in income distribution are not factored in. To better reflect the amount of goods and services people can buy with the incomes earned, it is thus necessary to convert the national income figures of two countries to a common currency (e.g., USD) using the PPP exchange rate rather than the market exchange rate. The purchasing power parity or PPP exchange rate is an exchange rate that would allow a given amount of money in one country to buy the same amount of goods in another country after exchanging it into the currency of the other country. Doing so will give a more meaningful assessment of the relative standard of living in different countries. For example, even if US had a GDP p.c. that is twice that of the other country, if it has a purchasing power that is less than the other country, the GDP data may overstate the difference in the SOL. Even if the data could take into account per capita GDP (PPP) to compare material standard of living across countries, there is still an issue that income generated in the countries may not be evenly distributed. In reality, an average person residing in a country with higher per capita GDP (PPP) but wide income disparity may be worse off than another who resides in a country with lower per capita GDP (PPP) but a more even income distribution. Lastly, GDP data tends to be better at measuring material SOL compared to non-material SOL. A higher GDP in the US compared to another country may be accompanied with greater negative externalities generated from pollutive production processes. This reduces the non-material SOL as there may be a deterioration in the health conditions of households in the US. <i>Note: Other limitations of using GDP to compare SOL across countries can also be used.</i>	

	<u>Limitations of unemployment rate and inflation rate.</u> Using unemployment rate to compare SOL across countries has its limitations such as the issue of unreported employment. Some people fail to report legal employment because this might jeopardise their income. For example, there may be workers who are engaged in the shadow economy or black market may not report their job status truthfully for fear of prosecution. This would mean that the unemployment rate is overstated in the official statistics. Inflation rate also has its limitation as it requires assumptions of similar price levels previously and nominal incomes to be similar for a comparison. As countries have different price levels and nominal incomes, it may be challenging to determine the real purchasing power.	
Conclusion	In conclusion, the data has <u>some</u> usefulness in comparing SOL across countries When comparing US to other countries with quite differing characteristics, it may be insufficient to use the provided data alone. For example, comparing the US with India, the vast difference in nominal GDP per capita may suggest a wide gap in their SOL. However, given that in India, their cost of living is significantly lower than the US, the use of nominal GDP per capita may significantly overstate US's relative SOL. In such a case, the data may not be useful on its own. Additionally, given that the data provided is largely focussed on determining material SOL, the usefulness is severely limited in comparing SOL. Thus, to have a better sense of the comparison of SOL between US and other countries, the data should be supplemented with other indicators. For example, instead of just using market exchange rates, the data should be adjusted using purchasing power parity exchange rates to take into account the differences in cost of living. Additionally, other non-material SOL indicators such as literacy rates, pollution rates and life expectancy	

	can be used to provide a fuller picture of the non-material SOL across the countries.	
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LORMS

L3	Answer is relevant and addresses question requirements (why the data is useful and why the data may not be useful in comparing SOL between US and other countries) in a rigorous manner with the aid of relevant diagrams.	8 – 10
L2	- Answer is relevant but either only one requirement is addressed; or - Both requirements are addressed in an underdeveloped manner (i.e. incompletely explained) or lacking in rigour.	5 – 7
L1	Answer is largely irrelevant and/or there are major content errors and/or gaps present in the analysis.	1 – 4

E3	Two well-explained evaluative judgments about both requirements plus an overall summative conclusion.	5
E2	Two well-explained evaluative judgments about both requirements	3 – 4
E1	A well-explained evaluative judgment about 1 requirement	1 – 2

H2 Prelim Essay Q6

Globalisation has led to increased flows of trade, capital and labour but have also created increased environmental pressures and more uneven distribution of benefits. This has caused more governments around the world to subsidise retraining programmes and research and development in clean technology.

- Explain why globalisation may make it harder for a country to achieve inclusive and sustainable growth. [10]**
- Discuss whether the above use of government subsidies is appropriate for all governments to achieve inclusive and sustainable growth. [15]**

Part (a)

Question analysis

Command word	Explain	Explain in detail
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Content	Globalisation Inclusive growth Sustainable growth	How increases in trade, capital and labour flows may worsen inclusive & lead to unsustainable growth Use of labour market diagrams Use of MSC-MSB diagram
Context	No specific context	Can consider developing or/and developed economy
Approach	R1: Why globalisation may make it harder for a country to achieve inclusive growth R2: Why globalisation may make it harder for a country to achieve sustainable growth	

Suggested answer

Introduction	Globalisation can bring about positive impacts to a country in terms of the increased export revenue earned and access to cheaper imported goods and transfer of technology and skills from FDI inflows, thereby contributing to sustained economic growth. However, it can also bring about impacts that negatively affects inclusive and sustainable growth. Inclusive growth refers to a rate of growth that is sustained over a period of time, is broad-based across economic sectors and creates productive employment opportunities for the majority of the country's population. Sustainable growth refers to a rate of growth that can be maintained without creating other significant economic problems, particularly for future generations. For example, ensuring that economic growth does not result in excessive environmental problems or resource depletion.	Give an overview Define the 2 key terms
R1	The removal of trade barriers exposes domestic firms in a country to greater competition from abroad, permitting domestic consumers to switch to foreign suppliers who are able to produce cheaper products or offer better product quality.	Link from globalisation: increased

Hence, this causes domestic firms to restructure, adopting latest technology to build new comparative advantages in the expanding industries. This causes an increase in demand for high-skilled labour in the expanding industries from DD1 to DD2, causing higher wage to be earned by the high-skilled workers from W1 to W2 in Figure 1.

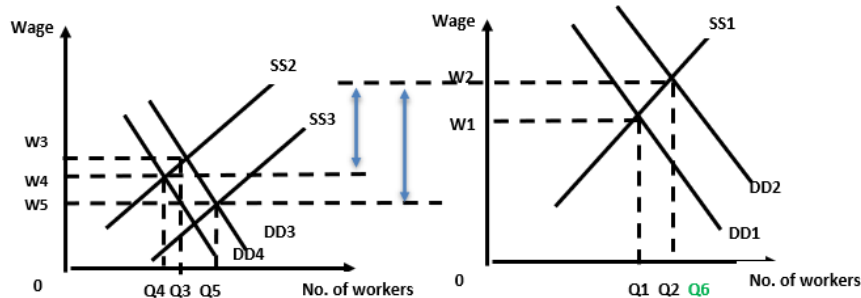


Fig 2: labour market for low-skilled workers

Fig 1: labour market for high-skilled workers

On the other hand, there will be a fall in demand for low-skilled labour in the contracting industries from DD3 to DD4. Hence, Q3Q4 quantity of low-skilled workers becomes unemployed & wages are lowered from W3 to W4 in Figure 2.

These unemployed low-skilled workers would want to move to the expanding industries to take up new jobs but are unable to due to the lack of relevant skillset to work with new technology and advanced machinery, resulting in structural unemployment. As a result, the income gap increases from W1W3 to W2W4, leading to increased income inequality and hence, causing non-inclusive growth.

Furthermore, in the context of a developed country, they could face an influx of low-skilled labour from developing countries to seek better job opportunities with higher wages or take up labour-intensive and manual jobs e.g. construction that are not taken up by domestic workers. This will increase SS of low-skilled labour from SS2 to SS3 and hence lower wage further to W5. As a result, the income gap increases further to W2W5, worsening non-inclusive growth.

competition from abroad

Illustrate labour market diagrams for low-skilled vs high-skilled labour

Explain link to increased income inequality

Link from globalisation: increased labour flows in terms of influx

		of low-skilled foreign labour
R2	The increase in trade and inflow of foreign direct investments (FDI) due to globalisation would make it harder to achieve sustainable growth. As a country specialises in the goods which it has comparative advantage in, it will be able to produce them at a lower opportunity cost, enabling them to produce in large output levels that satisfies domestic demand and be able to export to other trading partners. For instance, a developing country like Vietnam has abundance of land and low-skilled labour, enabling it to have comparative advantage in the production of agricultural and labour-intensive manufacturing goods as it is more efficient in producing these goods at a lower opportunity cost. This attracts in capital inflow from foreign MNCs, who locate their manufacturing bases in Vietnam to benefit from the lower cost conditions that maximises their profits. With the increased production levels domestically, derived demand for factor inputs such as natural raw materials like precious metals, timber, coal etc increases. Furthermore, these speed up the usage of natural resources which are finite, leading to rapid rate of depletion of natural resources, causing future generations to face limited resources, reducing future material standard of living. Furthermore, if these MNCs increase production of manufacturing goods using cheap production techniques that are often pollution-emitting, toxic waste byproducts can be discharged into the rivers or released into the air, leading to water and air pollution. Also, increased production that utilises fossil-fuelled generated energy will release greater carbon emissions into the environment, worsening climate change. In particular, developing countries are often more negatively impacted due to lack of government environmental regulations and technology to deal with pollution abatement. Profit-maximising foreign firms will not internalise these external costs of pollution, worsening sustainable growth in these developing countries.	Link from globalisation: increased trade & FDI inflow Impact through faster depletion of natural resources Impact through increased environmental damage Example – developing economies

Conclusion	In conclusion, in the absence of government intervention, globalisation may make it harder for a country to achieve inclusive and sustainable growth.	
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LORMS

L3	Answer is relevant (negative impacts of globalisation on inclusive and sustainable growth) and is well-explained with accurate and thorough economic analysis.	8 – 10
L2	Answer is relevant (negative impacts of globalisation on inclusive and sustainable growth) and is explained, although there may be minor errors and/or gaps in analysis.	5 – 7
L1	Answer is largely irrelevant (e.g. weak or no links to globalisation, inclusive and sustainable growth) and/or there are major content errors and/or gaps present in the analysis.	1 – 4

b) Discuss whether the above use of government subsidies is appropriate for all governments to achieve inclusive and sustainable growth. [15]

Question Analysis

Command word	Explain	Explain in detail
Content	SSP: subsidise retraining programmes and research and development in clean technology inclusive growth sustainable growth	Explain how SSP works to achieve sustained growth which is inclusive and sustainable
Context	No specific context	Can consider developing or/and developed economy
Approach	R1: The use of government subsidies by a country is an appropriate way to achieve inclusive growth	

	R2: The use of government subsidies by a country is an appropriate way to achieve sustainable growth
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Suggested Answer

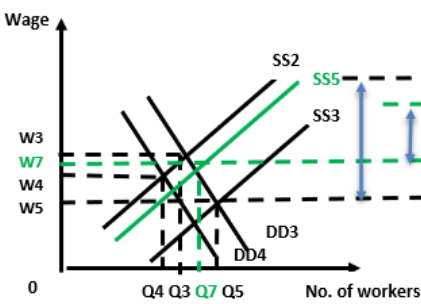
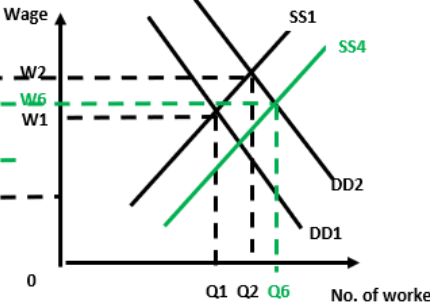
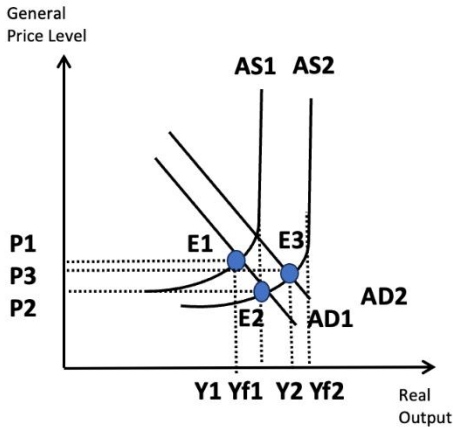
Intro	In order to achieve inclusive and sustainable growth, governments have implemented supply-side policies such as subsidised research and development in clean technology and retraining programmes.	Overview
R1	<u>Use of govt subsidies for subsidising retraining programmes</u> By subsidising retraining programmes, workers are equipped with relevant skills, increasing their labour productivity. This enables <u>low-skilled workers to be able to take up jobs in the expanding industries</u>, increase their wages earned. This will increase the supply of high-skilled labour from SS1 to SS4(Figure 1) while reducing the supply of low-skilled labour from SS3 to SS5(Figure 2).   Fig 2: labour market for low-skilled workers Fig 1: labour market for high-skilled workers This reduces the income gap between the high-skilled vs low-skilled workers from W2W5 to W6W7, leading to greater inclusive growth 	Link inclusive growth to

	Figure 3 Link to AS in the LR: Furthermore, more output can be produced with each unit of input, leading to increase in productive capacity as AS increases, shifting AS rightwards from AS1 to AS2 resulting in potential growth. Link to AD(DD-side effects): Furthermore, with higher government spending, this will bring about secondary impacts of increasing the AD from AD1 to AD2. <u>Overall outcome:</u> Link to rNY: This will create the incentive for firms to put to <u>use the newly-created capacity to expand output</u>, from Yf1 to Y2. This increases actual growth further. Link to GPL: With the expanded productive capacity, firms are able to increase output without intensifying the competition for factor inputs, causing GPL to fall from P2 to P3, resulting in non-inflationary sustained growth at the same time. <u>Limitations</u> <u>[uncertainty of outcomes]</u> Higher spending on retraining programmes does not necessarily translate into certain outcomes. The effectiveness of training depends very much on workers' attitude and aptitude towards training. Workers may not want to go for training <u>due to the opportunity cost incurred</u>. By attending the courses, they have to give up the income earned at work instead. Also, they may not always be able to pick up the training effectively due to aptitude issues. Hence, this will limit the extent to which these workers can successfully gain new skillset to move into the expanding industries.	Link to sustained growth
R2	<u>Use of SSP – subsidise R&D in clean/green technology</u> <u>Link to sustainable growth:</u> As governments subsidise R&D in clean/green technology, it will encourage more firms to invest in these areas, e.g. increase efficiency of using solar energy • Successful R&D outcomes of clean technology will lead to lesser carbon emissions with the same amount of output → slow down effects of global warming and climate change • reduce reliance on fossil fuels → slow down the depletion of scarce natural resources → leading to sustainable growth	Link to how it reduces environmental pollution Link to how it reduces the

	<u>Link to AS in the LR:</u> At the same time, successful R&D outcomes $\rightarrow$ creation of new machinery in harnessing solar energy $\rightarrow$ increase stock of capital and increase efficiency of capital $\rightarrow$ increase in productive capacity as AS increases, shifting AS rightwards resulting in potential growth as seen in Figure 3 <u>Link to AD(DD-side effect):</u> Furthermore, with higher investment spending, this will bring about secondary impacts of increasing the AD to AD2 as seen in Figure 3 <u>Overall outcome:</u> Eventually, sustained growth will be achieved as explained earlier. <u>Limitations</u> <u>[costly]</u> Subsidising R&D for clean technology is very costly. It will lead to opportunity cost incurred as government spending could have been used for other areas of development e.g. building more hospitals to meet the needs of an ageing population. Therefore, this can lead to a trade-off with non-material standard of living.	depletion of resources <u>Link to sustained growth</u>
Conclude	In conclusion, whether the above use of government subsidies is appropriate for all governments to achieve inclusive and sustainable growth [Substantiation - FRESH- Feasibility] is dependent on the fiscal sustainability of the government. In Singapore's case, other than having deep fiscal reserves, stand-alone funds, such as Lifelong Learning Endowment Fund, National Productivity Fund, have been established to enable some government expenditures to be on a self-financing basis. This helps to reduce the burden on govt's current budget finances to a large extent as these expenditures are rather long-term in nature.	Signpost conclusion clearly

	[Stand] Hence, it is appropriate to a large extent for governments with budget surpluses to achieve both inclusive and sustainable growth. On the other hand, governments facing budget deficits will need to rely on measures such as implementing a more progressive income tax system or tax hikes to achieve inclusive growth and perhaps implement taxes to reduce carbon emissions or air pollution. [Substantiation – FRESH – time Horizon] [Stand] In dealing with severe or worsening income inequality or pollution issues, government subsidies on retraining programmes and R&D in clean technology will not be appropriate even for governments with budget surpluses as they take time to take effect. In the short run, governments with budget surpluses can direct its subsidies in terms of giving transfer payments e.g. utility bill vouchers or subsidies for healthcare to the lower-income households instead to temporarily reduce the widening income inequality. To quickly address pollution issues, government regulations and legislations in terms of setting maximum pollution standards will be more effective as all firms must comply to the laws or otherwise face the severe penalties imposed. [Summative conclusion] Ultimately, these subsidies in research and development in clean technology and retraining programmes are appropriate to a large extent as they target the root causes of structural unemployment in contributing to non-inclusive growth and worsening environment impacts due to increased pressures in limited non-renewable resources. Government with budget deficits may need to seek financing from international organisations instead or otherwise, they would face larger long-term costs associated with these problems.	
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LORMS

L3	Answer is relevant ((how subsidies in retraining & R&D programmes achieve inclusive and sustainable growth, including links to sustained growth) and is well-explained with accurate and thorough economic analysis.	8 – 10
L2	Answer is relevant (how subsidies in retraining & R&D programmes achieve inclusive and sustainable growth) and is explained, although there may be minor errors and/or gaps in analysis.	5 – 7

L1	Answer is largely irrelevant (e.g. weak or no links to subsidies in retraining & R&D, inclusive and sustainable growth) and/or there are major content errors and/or gaps present in the analysis.	1 – 4
E3	Two well-explained evaluative judgments about the use of subsidies (retraining & R&D programmes) to achieve inclusive AND sustainable growth PLUS an overall summative conclusion.	5
E2	Two well-explained evaluative judgments about the use of subsidies (retraining & R&D programmes) to achieve inclusive AND sustainable growth	3 – 4
E1	A well-explained evaluative judgment about the use of subsidies (retraining & R&D programmes) to achieve inclusive OR sustainable growth	1 – 2