Anderson Serangoon Junior College
2025 H2 Economics Prelim Paper 2
Suggested answers

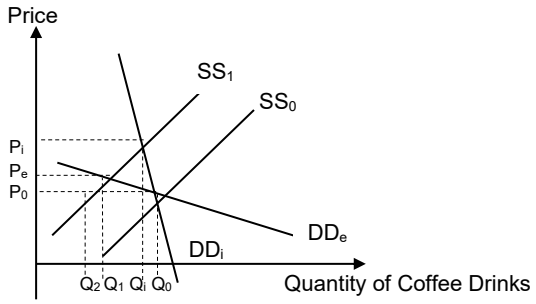
Question 1

1 The price of a cup of coffee has surged, due to poor crop yields in drought-hit Vietnam, while coffee consumption in Southeast Asia continues to rise due to growing affluence. In Singapore, regular coffee drinkers have noticed rising prices at their usual chains, with international brands such as Starbucks and Bacha Coffee seeing larger price increases than local brands like Heavenly Wang, Ya Kun, and neighbourhood coffee shops.

(a) Explain how elasticities of demand can assist in understanding each of the effects of poor crop yields and growing affluence on the prices of different brands of coffee drinks. [10]

(b) Discuss the impact of a rise in the price of a cup of Starbucks coffee on their revenue and the revenue of retailers selling related goods. [15]

Part (a)

Suggested Answer	**Key Points**
The price of coffee drinks is determined by demand and supply factors, which are influenced by poor crop yields and growing affluence. The concepts of price elasticity of demand (PED) and income elasticities of demand (YED) can help to explain how the prices of different brands of coffee drinks are affected when supply falls due to poor crop yields and when demand rises because of growing affluence for both international and local brands of coffee drinks. **R1: PED helps explain how poor crop yields affect the prices of different brands of coffee drinks.** Poor crop yields will cause prices of coffee drinks to increase due to a fall in supply. Bad weather, such as droughts and floods directly disrupts agricultural production. This disruption often leads to a significant reduction in the supply of crop yield including coffee plants. Since coffee beans are a factor of production of coffee, the rise in price of coffee beans due to poor crop yield will lead to a rise in cost of production for coffee drinks. This results in a leftward shift of the supply curve from SS_0 to SS_1 as shown in Figure 1.  Figure 1	Introduction

The extent of impact of a rise in cost of production on prices of different brands of coffee drinks will depend on the different PED value. Demand for international brands such as Starbucks and Bacha Coffee are likely to be price inelastic in demand (represented by the DD_i curve) due to the brand's strong advertising and brand loyalty. As the fall in supply from SS_0 to SS_1 will lead to a shortage of Q_0Q_2 amount at the original price, P_0. This exerts an upward pressure on the market price. As price increases, quantity demanded falls and quantity supplied rise. As demand for international brand's coffee drinks is price inelastic, the rise in price leads to less than proportionate fall in quantity demanded. This means that in order for the market to clear and reach a new equilibrium, the rise in price has to be greater in order for the decrease in quantity demanded sufficiently to clear the shortage. Thus, there is a larger rise in prices of international brand coffee drinks from P_0 to P_i.

On the other hand, demand for coffee at local brands such as Heavenly Wang, Ya Kun, and neighbourhood coffee shops are likely to be price elastic (represented by the DD_e curve) due to the availability of many substitutes. Since demand is more price elastic, a smaller price increase is required to induce the necessary increase in quantity demanded in order to clear the shortage. Hence, the rise in price will be to a smaller extent from P_0 to P_e.

Hence, PED helps explain how poor crop yields affect the prices of different brands of coffee drinks when there is a full in supply.

R2: YED helps explain how growing affluence affects the prices of different brands of coffee drinks.

Growing affluence leads to an increase in demand for coffee drinks. When household incomes rise, purchasing power also increases, enhancing consumers' ability and willingness to spend. Since coffee drinks are considered normal goods, higher incomes result in a rise in demand for them. This results in a rightward shift of the demand curve as shown in Figure 2.

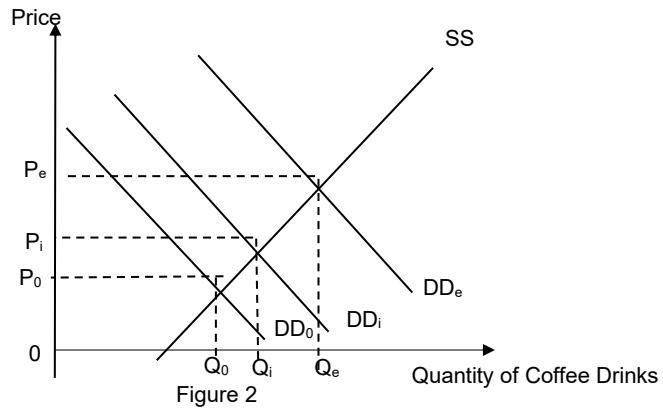


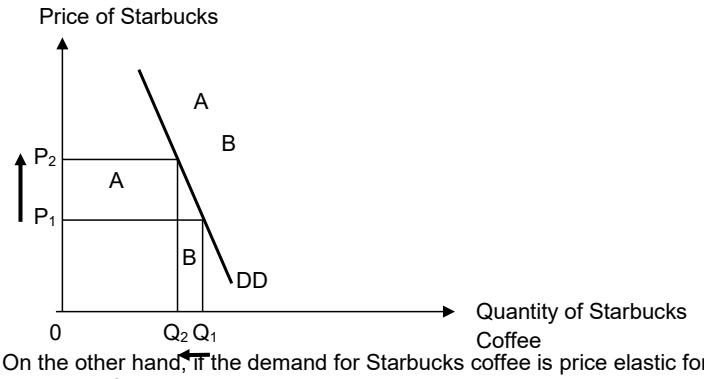
Figure 2

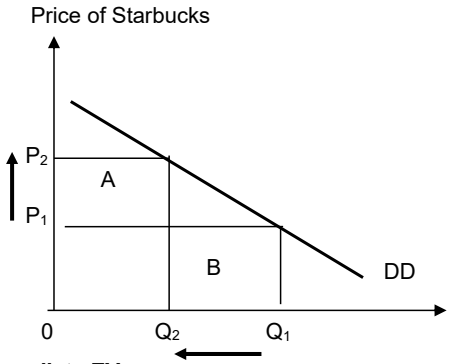
Conclusion

The extent of the increase in demand for coffee drinks depends on their YED value. Demand for international brands such as Starbucks and Bacha

Coffee is likely to be income elastic, as these are normal-luxury good. As a result, demand for such brands is likely to rise by a larger extent from DD_0 to DD_e as shown in Figure 2 from. Consequently, the price of international brand coffee drinks increases more significantly from P_0 to P_e. On the other hand, demand for coffee drinks from local brands such as Heavenly Wang, Ya Kun, and neighbourhood coffee shops is likely to be income inelastic as they are considered normal-necessity goods that form part of daily consumption. Thus, demand is likely to shift to a smaller extent as shown in Figure 2 from DD_0 to DD_i, leading to a smaller rise in price from P_0 to P_i. In conclusion, poor crop yields and growing affluence have different impacts on the prices of coffee drinks. The concepts of price elasticity of demand (PED) and income elasticity of demand (YED) are essential in explaining the extent of these price changes across different brands.	

(b) Discuss the impact of a rise in the price of a cup of Starbucks coffee on their revenue and the revenue of retailers selling related goods. [15]

Suggested Answer	Key Points
Changes in the equilibrium price and quantity in one market can influence related markets. An increase in the price of a cup of Starbucks coffee will not only affect Starbucks' revenue, but it is also likely to have spillover effects on other markets. **R1: A rise in the price of a cup of Starbucks coffee may either increase or decrease its revenue, depending on the price elasticity of demand (PED) for their coffee.** An increase in the price of a cup of Starbucks coffee would reduce the quantity demanded and, consequently, affect the total revenue (TR) earned by Starbucks. The extent of this change, and whether total revenue rises or falls as a result of the price increase, depends on the price elasticity of demand (PED) for Starbucks coffee. Assuming that the demand for Starbucks coffee is price inelastic, because of consumers' strong preferences for the coffee chain brand, particularly among loyal fans and supporters. With an increase in price from P_1 to P_2 as seen in the diagram below, quantity demanded falls less than proportionately from Q_1 to Q_2. The total revenue lost due to the decrease in quantity demanded (Area B) is smaller than the total revenue gained from the higher price (Area A). Therefore, this leads to an overall increase in the total revenue earned by Starbuck for this group of consumers.  On the other hand, if the demand for Starbucks coffee is price elastic for a segment of consumers who are highly sensitive to price, due to the presence of close competitors such as Bacha coffee, Luckin and The Coffee Bean and Tea Leaf, then an increase in price from P_1 to P_2 as seen in the diagram below would lead to a more than proportionate fall in quantity demanded for Starbucks Coffee, from Q_1 to Q_2. The total revenue lost due to the decrease in quantity demanded (Area B) is more than total revenue gained due to the increase in price (Area A). Therefore, the overall total revenue earned by Starbucks for this group of consumers would decrease. Hence, whether the total revenue of Starbucks coffee rises or falls as a result of a price increase depends on the price elasticity of demand (PED) for the relevant group of consumers.	

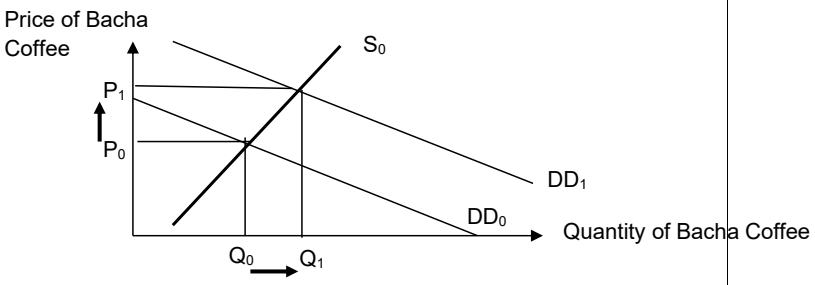


Intermediate EV:
However, the difference in PED of Starbucks may be different for consumer in different countries. For example, in developed countries where the income level is higher, a price of a cup of Starbucks coffee may take up a small proportion of a consumer's income. Hence PED is likely to be less than one, as compared to the same cup of coffee in a developing country where income levels are lower. Therefore, understanding the difference in PED will allow retailers such as Starbucks to price its coffee differently in different countries if its objective was to increase total revenue.

R2: A rise in the price of a cup of Starbucks coffee may also affect the revenue of retailers selling related goods, such as substitutes or complements, and the extent depends on the cross price elasticity of demand (XED) for their coffee.

An increase in the price of a cup of Starbucks coffee may also affect the revenue of competitors such as Bacha Coffee, Luckin and The Coffee Bean and Tea Leaf. Assuming Bacha Coffee is a close substitute for Starbucks, where consumers view the two brands as close substitutes for satisfying their caffeine needs and are likely to respond strongly to price changes. In this case, the demand for Bacha Coffee would be highly positively cross-price elastic (XED>1).

An increase in the price of a cup of Starbucks coffee may also affect the revenue of competitors such as Bacha Coffee, Luckin, and The Coffee Bean & Tea Leaf. Assuming Bacha Coffee is a close substitute for Starbucks, where consumers view the two brands as close alternatives for satisfying their caffeine needs and are likely to respond strongly to price changes. In this case, the demand for Bacha Coffee would be highly positively cross-price elastic (XED > 1).

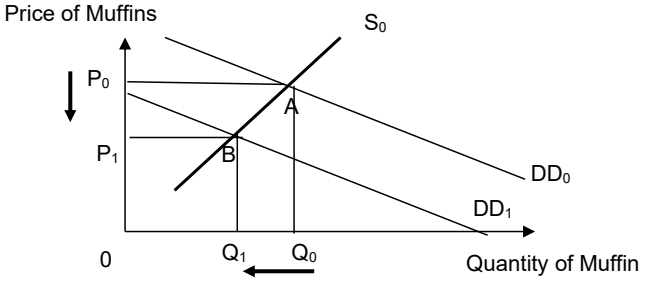


Therefore, the increase in price of Starbucks Coffee would lead to a more than proportionate increase in demand for Bacha Coffee, as seen from the shift in demand curve in the diagram below, from DD_0 to DD_1. This would therefore lead to an increase in TR from area $0P_0AQ_0$ to area $0P_1BQ_1$ for Bacha Coffee.

Intermediate EV:
However, the extent of the increase in total revenue also depends on the strength of the cross-price elasticity of demand (XED). If the two brands are perceived as weak substitutes (XED <1) by consumers who have a strong preference for Bacha Coffee due to its unique flavours and strong branding, the rise in demand for Bacha Coffee will be smaller. As a result, the increase in TR would be less significant compared to the previous case.

An increase in the price of Starbucks coffee may also adversely affect the revenue of goods and services that are complementary in nature, such as muffins, croissants, and cakes from bakery and pastry shops that are often consumed with coffee. Other complements could include coffee equipment and accessories, such as mugs and tumblers, particularly for consumers who value sustainability and prefer to use their own reusable mugware. Hence, when the price of a cup of Starbucks coffee rises, firms selling muffins may experience a decrease in demand, as fewer consumers purchase coffee to go with these complementary goods such a muffin.

Therefore, the increase in price of Starbucks coffee would lead to a decrease in demand for muffins, as seen from the leftward shift of the demand curve as seen in the diagram below, from DD_0 to DD_1. This would therefore lead to a decrease in TR from area $0P_0AQ_0$ to area $0P_1BQ_1$ for Muffin.



Intermediate EV: However, the extent of the fall in demand depends on how close the goods are as complements. It is likely that the demand for muffins from other pastry and bakery shops is likely to be negatively cross-price inelastic with respect to Starbucks coffee, since Starbucks already offers its own cakes and pastries. Hence, the impact on the demand for pastries from other bakeries would be limited. In this scenario, demand would fall less than proportionately, resulting in only a small decrease in total revenue, as shown in the case above. **Summative Evaluation:** In conclusion, while the above analysis explains the possible impacts on the markets for Starbucks coffee, Bacha Coffee, and muffins, these outcomes may not hold if the ceteris paribus assumption is relaxed. In reality, many other factors on both the demand side, such as rising incomes, and the supply side such as increased competition from bubble tea chains or coconut-based beverages, could influence the demand for Starbucks coffee and its substitutes or complements. Moreover, even if the price of Starbucks coffee increases, the company could employ strategies such as marketing and advertising to alter consumer tastes and preferences. For instance, by introducing new flavours or leveraging celebrity endorsements, Starbucks may still be able to attract customers and ultimately increase its total revenue.	

Question 2

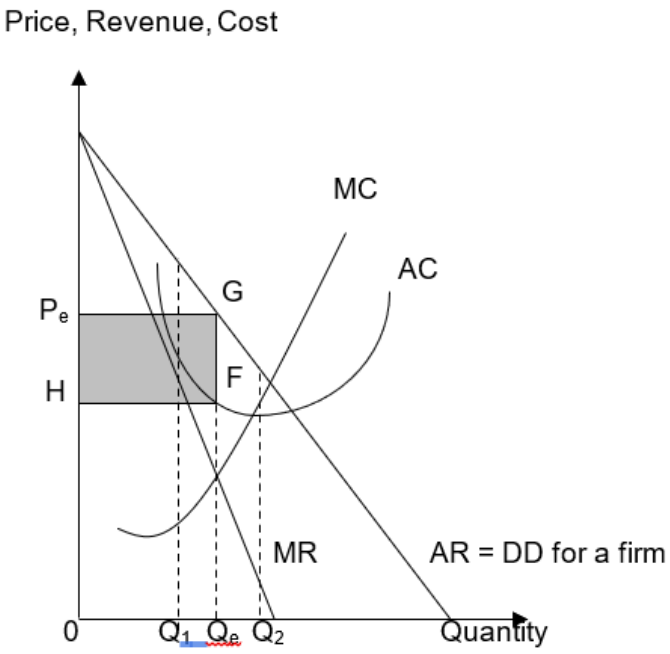
2 Adult training generates external benefits and its private benefits are also often under-estimated. However, recent data from the Ministry of Manpower showed that Singapore's adult training participation rate fell to a nine-year low of 40.7% in 2024.

(a) Explain how a rational adult employee would decide whether to participate in a training programme and how a rational training provider would determine the output level of training services provided. [10]

(b) Discuss whether subsidising adult training programmes is the best policy measure to improve efficiency in the market for adult training. [15]

Suggested answer for part (a)

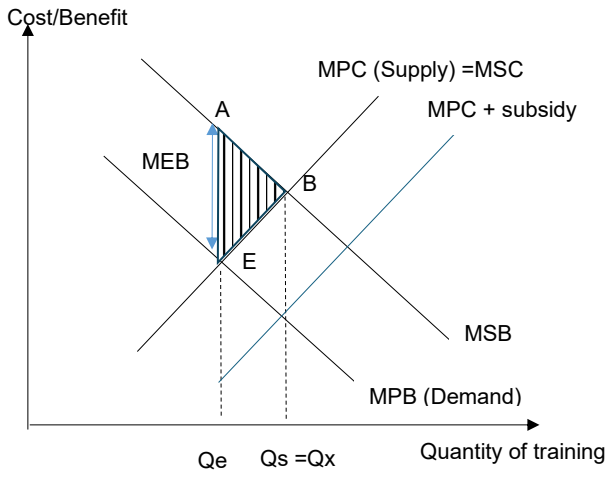
Economic agents adopt a rational decision-making framework to make decisions, where they weigh the marginal private benefit (MPB) of making a decision against the marginal private cost (MPC) in order to maximise their self-interest (objectives). In the case of consumers this can be his utility or satisfaction and in the case of producers, it would be maximising profits. Economic agents adopt the marginalist principle to make choices.	
As stated above a rational adult's primary objective is to maximise his utility and this would apply when making decisions. As part of the decision-making process, he would consider his constraints such as financial and time constraints. For example, a parent of young children may not have the free time to attend training as they would need to take care of their children. A rational adult would also need to gather information on the training programmes available such as the content, the quality of the instructor and duration of workshop. He would also consider various perspectives when making his decision as these may have an impact on his decision. For example, a rational adult may consider whether his employer would be supportive of him taking time off work to attend a training programme.	**R1: Rational adult employee will weigh the MB (utility of attending training) against MC (explicit and implicit costs).**
After going through the steps highlighted above, he will consider the private benefits and costs of attending training. One main benefit would be the skills and knowledge that he can learn during training which would help increase his productivity and possibly his wages. He may also consider the potential benefits of increased employability as compared to other job seekers who may not have the same skills. He would determine the costs of attending training, both the explicit costs such as the monetary cost of training as well as the implicit cost, i.e. the opportunity cost or the next best alternative forgone. In this case, the rational adult would consider what he could have done instead of attending training courses such as the benefit obtained from spending time with his family or friends. The rational adult employee will decide to attend training if the MPB of attending training is greater than the MPC. Conversely, if the MPC of training is greater than the MPB of training, the employee will not attend training sessions. For example, an employee has already attended several training sessions on the same topic may find that each successive training session has diminishing returns in terms of the additional content or skills covered, i.e. the MPB of attending training decreases.	

Similarly, a rational training provider will decide on its optimal output level by weighing the marginal benefit (or the marginal revenue gained by the firm) from producing an additional unit of training against the marginal private cost of producing that unit of training. The marginal revenue is the additional revenue gained by producing one additional unit of training while the marginal cost incurred (e.g. the salary of hiring additional trainers, the cost of printing additional materials) A profit-maximising training provider would determine their optimal level of output by comparing marginal revenue (MR) with marginal cost (MC). They will increase production as long as MR exceeds MC (MR > MC), for example, the producer currently producing at Q_1 would increase production because producing an additional unit beyond Q_1 generates more revenue than it costs, leading to increased profits. The provider will continue to expand production until MR equals MC (MR = MC), as this is the point where profits are maximised. Producers producing at Q_2 where MC > MR would reduce production as producing fewer units would reduce more costs than revenue, leading to higher profits. From the diagram below, the producer will produce where MC=MR at the equilibrium quantity Qe.  While the decision-making framework provides a model to explain how rational economic agents make decisions such as whether to participate in a training programme, one limitation is that the agents only consider their their private costs and benefits and ignore external benefits and costs. Agents may also have imperfect information which may cause them to make sub-optimal decisions.	**R2: Rational training provider will weigh the MR against MC**

Level	Descriptor
L3	Well- developed explanation of how a rational adult employee and a training provider would make their respective decisions. The explanation would provide a good overview of the decision-making process in the context of attending a training programme and/or determining the level of output.
L2	Well-developed explanation on either how a rational adult employee decides whether to attend a training programme and/or how a training provider determines its level of output. OR Under-developed explanation of how a rational adult employee decides whether to attend a training programme and how a training provider determines its level of output. There may be gaps in explanation and/or lack of relevant examples or contextualisation.
L1	Limited attempt to explain of how a rational adult employee decides whether to attend a training programme and how a training provider determines its level of output. The response may have conceptual errors or reproduction of content without addressing the question directly.

(b) Discuss whether subsidising adult training programmes is the best policy measure to improve efficiency in the market for adult training. [15]

Suggested answer for part (b)

The rational decision-making process results in efficient outcomes if there are no external benefits and if individuals possess perfect information. However, in the case of attending training courses, both of these assumptions do not hold. Hence, there is a role for the government to intervene in the market for adult training to improve efficiency. With adult training there would be external benefits that would accrue to the employers whose workers attend these training sessions. After attending the training sessions, these workers would have additional knowledge and skills which would translate to higher productivity at work and higher revenue and profits for the firm, ceteris paribus. These workers may also share with their colleagues what they have learnt which would also help to improve the organisations' collective skills and knowledge. In addition, at the level of the macroeconomy, as an increasing proportion of the labour force attends such training programmes, the quality of the labour force and the productive capacity of the economy would increase. However, these external benefits are not taken into account by the rational adult who will only consider his own private benefits and costs. This causes a divergence between the MPB and MSB by the extent of the marginal external benefit or MEB. Hence, the 'market equilibrium, Qe' or the amount of training that the employee will sign up for is less than the socially optimal level of consumption (Qs). This results in a deadweight loss to society of AEB as each additional unit of training consumed above the Qm would add more to society's benefit than society's costs and ought to have been consumed until the socially optimal quantity Qs. Fig 1: Market for Adult Training  	**R1: Explanation of the external benefits of training and how government subsidies would help to increase efficiency in the adult training market**

Given this underconsumption, the government should step in to intervene by providing a subsidy equivalent to the marginal external benefit (MEB) at Qs. This would lower the cost of production for training providers and increase the supply of training. The supply curve (MPC) would shift downwards by the extent of the MEB. This in turn would cause a decrease in prices as there would be a surplus at the previous price level, leading to a downward pressure on prices and increasing the quantity demanded of training until the quantity supplied equals the quantity demanded at the new market equilibrium quantity Qx = Qs. The new market equilibrium is efficient and there is no longer a welfare loss to society.

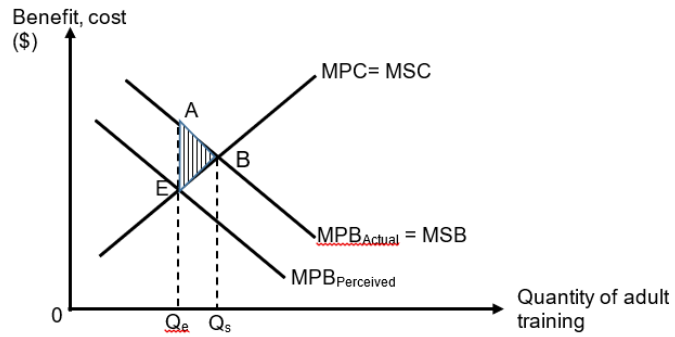
However, there are some limitations to subsidies. One limitation is the opportunity cost of providing subisidies. Instead of providing subsidies for adult training, the government could have used these funds to provide more healthcare services or to improve transport infrastructure, both of which are also essential services in Singapore with our aging population. Another important limitation is that the subsidy does not address the other key reason for the underconsumption of adult training – the under-estimation of the private benefits of attending training. Just because the price of attending training programmes is lower does not mean that people would automatically consume more training programmes. Those who are still not convinced of the benefits of training would continue to not attend.

Limitations of subsidies

E1: Contextualised to Singapore

In the real world, adult employees do not have perfect information and may not be fully aware of the full benefits of attending training programmes as some of these benefits may only become realized or evident in the future. For example, an adult employee who attends a training programme on AI may not immediately be able to apply what he has learnt in his work and may not fully appreciate the benefits of the training that he has attended, i.e. his perceived marginal private benefit or $MPB_{perceived}$ is less than the actual MPB or MPB_{actual} Where over time, as AI becomes more integrated into his work processes, the benefits of training will be realised. The individual will consume where $MPB_{perceived}$ = MPC and there is an underconsumption relative to the socially optimal quantity (Qe <Qs).

R2: Underconsumption of training is also caused by imperfect information and government needs to consider public education to address this root cause



In order to address this, the government needs to engage in public education to highlight the benefits of attending training and continuous learning. In Singapore, this is done through the SkillsFuture movement which was launched in 2015 to emphasise the importance of continuous education and training to adapt to the evolving job market. SkillsFuture actively promotes the idea of lifelong learning, which would help to address the disconnect between the perceived and actual benefits of attending training. This would increase the $MPB_{perceived}$ to the MPB_{actual} hence eliminating the deadweight loss to society.	
However, as with any public education campaign, mindset shifts and changes in perspectives will take a longer time as employees may still have a traditional model of career progression. This is further compounded by Singapore's aging population where mature employees may find unlearning and re-learning challenging and would rather stick to what they already know.	**Limitations of public education.** **E1: Contextualised to Singapore**
Whether subsidy is the best policy depends on the ease of implementation of the policy. In this case, subsidy may be the best policy as it may be easier to encourage participation through providing incentives like subsidy as compared to mere provision of information. In addition, the cause of lack of participation due to imperfect information may not be significant, considering the literary rate of people in Singapore. Even with generous financial support in the form of SkillsFuture credits and public education, adult training participation has fallen over the years. This suggests that there are other constraints such as time constraints, employer willingness to send employees for training amongst others. The Singapore government has continued to refine SkillsFuture over the years to balance the need to upskill with business and employees' cost and time concerns. One such example is the setting up of Company Training Committees (CTCs) that bring union leaders and employers together to design and implement workforce upgrading plans where workers can get training within their own companies. This helps to resolve employers' concerns about the relevance of training programmes to their own workplace needs.	**Conclusion**

Commented [TCT1]: Think we should provide a stand first since the question asked about "best policy".

Do we want to add in the point to "combine both policies to address both causes of market failure"?

There are two requirements in this question. For **each** requirement of the question, you will be assessed on your depth of analysis:

Depth of analysis	Descriptor
Analytical	An analytical explanation of question requirement with good application of relevant tools of analysis.
Cursory	An answer that shows cursory understanding of the question requirement and is lacking in AR and AP.
Knowledge	An answer that demonstrates weak understanding of the question requirement with many CK errors and possible QA errors.

For this question, 5 marks are allocated for evaluation. Your evaluation is assessed based on this rubric:

	Evaluation
E3	A well-explained evaluative judgement about whether subsidies is the best measure to increase adult training participation by comparing subsidies to an alternative policy measure. The evaluative judgement should be relevant and contextualized to Singapore and there should be a criteria to weigh between the subsidy and the alternative policy measure.
E2	A well-explained evaluative judgement about both requirements. OR Well-explained evaluative judgement about **one** requirement PLUS a learned evaluative statement for the second plus a **summative conclusion.** **Well-explained** evaluative **judgement** about **one** requirement PLUS a learned evaluative **statement** for the **second.**
E1	A learnt evaluative **statement** for t**wo** requirements OR a **well-explained** evaluative j**udgement** about **one** requirement. A learnt evaluative statement for **one** requirement.

Question 3

3 Singapore's public transport sector was historically dominated by two operators - SMRT and SBS Transit. To enhance competition and service quality, the government intervened and enabled new operators such as Tower Transit and Go-Ahead to enter the market. This has helped reduce market dominance while ensuring service standards.

(a) Explain how the level of competition in an industry impacts the type of profits that firms can make in the long run. [10]

(b) Discuss whether government intervention to curb market dominance in the public bus sector is necessary to improve outcomes for society. [15]

Suggested answer for part (a)	
The level of competition in an industry significantly impacts the type of profits that firms can make in the long run. A key determinant of the level of competition is the level of barriers to entry of the industry.	**Introduction**
In a monopoly, a dominant firm controls a significant share of the market, typically over **60%**. With low levels of competition, the firm can exert substantial control over prices and output, making it a **price setter** rather than a **price taker**. This market power is largely due to **high barriers to entry** which prevent new firms from entering the market and challenging the monopolist. For example, in the ride-hailing market in Singapore, the merger of Grab and Uber gave the combined company Grab a market share of around 80% of the Singapore ride-hailing market, making Grab a monopoly. This dominance creates a market structure with **low competition**. There are significant barriers to entry in the ride-hailing market. Brand recognition and consumer trust is one of such BTE. Grab is one of the earliest firm supplying ride-hailing service in Singapore. It has established a large pool of consumers who have come to trust its service and see it as an established platform with proven reliability, safety features, and customer support. There is also high capital investment involved as there is a need to develop and maintain a reliable app platform, GPS systems, payment infrastructure, and driver support services, making it difficult for new firms to enter the market.	**R1**: Impact of competition on a firm's ability to set prices and output levels, particularly within the context of monopoly.
Profit-maximising firms, such as Grab, determine their optimal level of output by comparing marginal revenue (MR) with marginal cost (MC). They will increase production as long as MR exceeds MC (MR > MC) because producing an additional unit generates more revenue than it costs, leading to increased profits. Firms continue to expand production until MR equals MC (MR = MC), as this is the point where profits are maximized. This equilibrium output level, represented by Q_m in Figure 1, reflects the optimal quantity of production for the firm. Any output beyond Q_m, where MC exceeds MR (MC > MR), will lead to a decrease in profits, as producing additional units would increase total costs more than total revenue.	Profit-maximising condition explanation Price and output in a monopoly in the short run

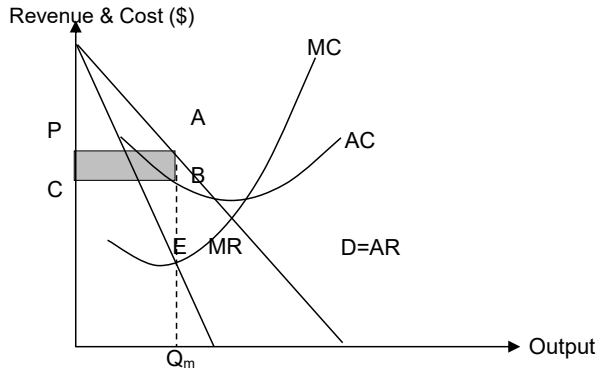
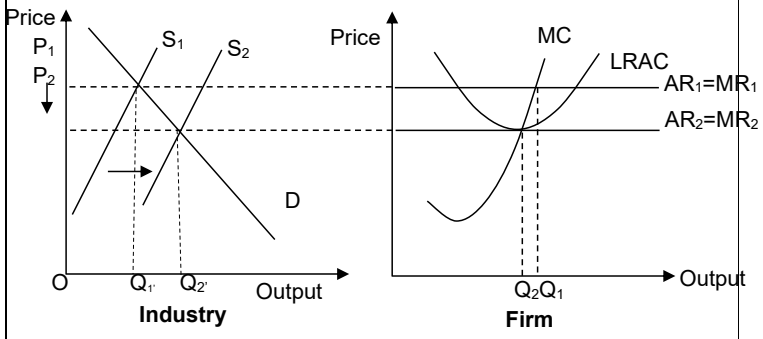


Fig 1. Monopolist earning supernormal profits

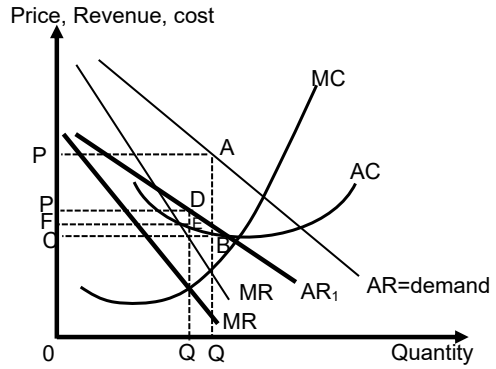
Once the monopolist determines the profit-maximising output level (Qm), it then looks to the demand curve (AR) to set the price (P). The monopolist can charge the highest price that consumers are willing to pay at Qm. Due to the lack of competition, a monopoly such as Grab can **earn** supernormal profits (the shaded area PCAB) at output level Q_m. This situation can persist in both the short and long run because of the high barriers to entry that Grab maintains, preventing potential rivals from competing on equal terms. Consequently, any supernormal profits accrued by Grab are not eroded by competition, allowing the firm to sustain high prices and profitability over time, even in the face of market challenges.	Price and output in a monopoly in the long run
In a perfectly competitive market, the presence of numerous competitors offering homogeneous products means that individual firms have no control over the market price. This is due to the **insignificant market share** of each firm, as every firm produces only a very small portion of the total industry output. As a result, no single firm can influence the market price on its own. Each firm must accept the price set by the forces of supply and demand. Consequently, a firm in perfect competition faces a **perfectly elastic (horizontal) demand curve** at the market-clearing price. This means the firm can sell as much as it wants at this price, but any attempt to raise the price will result in the loss of all sales, as consumers can easily switch to identical products offered by competitors. Therefore, a firm in perfect competition is a **price taker**, unable to influence the price on its own. For a firm in perfect competition, both **average revenue (AR)** and **marginal revenue (MR)** are equal to the market-clearing price. This is because each additional unit of output sold increases total revenue by the same amount, which is equal to the constant market price. Since the price does not change as output increases, the additional revenue gained from selling one more unit (**MR**) is the same as the price, and thus also equal to the firm's **AR**.	**R2**: Impact of competition on a firm's ability to set prices and output levels, particularly within the context of perfect competition (PC). Explain decision-making process for PC firms

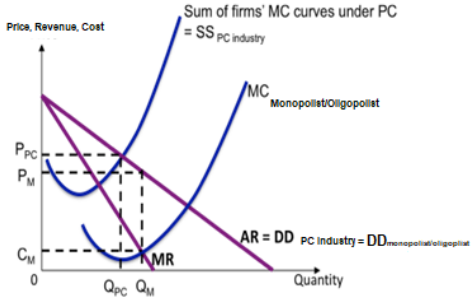
For a **profit-maximising** firm in perfect competition, the firm will accept the price (**P1**) determined by the market where **D = S1**. It will then determine the profit-maximising output by equating **MR = MC**, producing **Q_1** units of the good, as seen in Figure 2. Since the marginal revenue from each additional unit sold equals the price (**P = MR**), it also equals the marginal cost (**MC**) of producing that good.	Price and output for perfectly competitive firm in the short run
 Fig 2. Perfectly competitive firms earning supernormal profits attract new firms into the industry (no barriers to entry)	
Furthermore, in markets with a high level of competition, firms in perfect competition (PC) cannot sustain supernormal profits in the long run due to the ease with which new firms can enter the market. This lack of barriers allows new firms to enter the market easily when existing firms earn supernormal profits. The entry of new firms increases the total industry supply, leading to a rightward shift in the supply curve from S_1 to S_2. This increase in supply ultimately results in a fall in price (from P_1 to P_2), leading to the firm making only normal profits in the long run. As the demand facing an individual firm decreases, the output produced also falls to Q_2, where the new MR (MR2) equals MC, as shown in Figure 2b. Hence, for a PC firm, in the long run, both price and output will fall if the firm earns supernormal profits in the short run.	Price and output for perfectly competitive firm in the long run
In conclusion, the level of competition, which is affected by the level of barriers to entry, determines the level of profits that firms can make in the short and long run.	**Conclusion**

Mark Scheme

A	• Well-developed explanation of determination of price and output in both industries, examples of barriers to entry (BTE) and clear explanation of how the level of BTE impact the type of profits made in the long run. • Clear use of diagrams to illustrate the analysis above.
C	Some brief explanation of determination of price and output in both industries, and under-developed explanation of how the level of BTE impact the type of profits made in the long run.
K	Mere definition of some relevant concepts, but missing key concept of how the level of BTE impact the type of profits made in the long run.

(b) Discuss whether government intervention to curb market dominance in the public bus sector is necessary to improve outcomes for society. [15]

Suggested answer for part (b)	
From the preamble, the public bus sector was originally dominated by two operators before the government intervened to improve outcomes for society. Improvement in outcomes for society include improvement in efficiency and consumer welfare. Efficiency refers to allocative, productive and dynamic efficiency while consumer welfare is measured in terms of prices that consumers pay, the quantity and quality of goods and services they can enjoy and the availability of variety and choices in the goods and services that they can enjoy.	**Introduction**
To curb market dominance, the government can increase the level of competition by allowing more operators to enter the industry through competitive tendering. By allowing new entrants, the level of competition in the market increases. This may result in a fall in demand for incumbent firms' products, making the demand curves more elastic as more substitutes are available. Thus, the AR and MR curves will shift leftwards from AR1 and MR1 to AR2 and MR2 respectively and become gentler. At the new profit-maximising output level where MC= MR, the price charged by will fall from P1 to P2. This reduces the gap between P and MC, reducing the extent of allocative inefficiency. Allocative efficiency is achieved when society produces a combination of goods and services that maximises its welfare. This happens when price equals marginal cost (P=MC). However, the price charged by a dominant at profit-maximising output level is higher than its marginal cost of production (P>MC). This means that society values the last unit of the good more than the alternative goods forgone (i.e. opportunity cost). Thus with more competition, the reduction in the gap between P and MC reduces the extent of allocative inefficiency. Consumers also benefit from the lower prices. Furthermore, with greater competition, firms will be incentivised to adopt more cost-efficient production methods to reduce their costs so as to maintain profits given the lower AR.  	**R1**: Explain how the policy of increasing competition in the market can improve outcomes for society

However, allowing more competition may lead to wasteful duplication of resources which may lead to higher prices for the consumers. In the case of Singapore with such a small land size, having two or more firms in the market might lead to wasteful duplication of resources and reduce the extent of internal economies of scale being enjoyed. The reduction in cost savings could result in consumers paying higher prices instead.	**E1:** Evaluating the case for intervention via increasing competition
However, government intervention may not be necessary as market dominance can generate some positive outcomes for society. This is because firms with large market share enjoy significant economies of scale, market output may be produced at a lower average cost under monopoly or oligopoly compared to perfect competition. A single large-scale producer can exploit economies of scale more effectively than numerous smaller producers. The marginal cost curve of such a firm ($MC_{monopolist/oligopolist}$) would therefore be significantly lower than the combined marginal cost curves of the industry under perfect competition (Sum of MC curves under PC = $SS_{PC\ industry}$).  In a perfectly competitive market, the industry would produce at the price and output level where market demand equals market supply, i.e. at output level Q_{PC} and price P_{PC} However, a firm with larger market power may produce at a higher output level ($Q_M > Q_{PC}$ and offer the product at a lower price ($P_M < P_{PC}$), assuming the firm passes the cost savings from economies of scale on to consumers. If the firm passes these savings on, consumers could benefit from lower prices under the monopoly than they would in a perfectly competitive market.	**R2: Not necessary to intervene** Large firms can sometimes offer benefits such as **economies of scale**, lower prices, better quality of goods for consumers
Furthermore, firms operating in markets with limited competition, can continue to earn supernormal profits due to high barriers to entry. These profits give firms the ability to innovate and improve the quality and variety of the products they offer. In the case of public bus, this could include improvements in more regular timing of buses through real-time reading of traffic conditions, ultimately benefiting consumers with better services. Additionally, dominant providers may have the incentive and ability to invest in infrastructure and technology to expand route/service coverage. This	**Dynamic efficiency** argument

could result in better access to public bus services, benefiting consumers through improved service standards.	
However, the potential benefits to consumers from firms producing on a large scale and reaping EOS may not materialise if the firms do not pass on the cost savings and simply keep them as higher profits. Similarly, while dominant firms have the ability to innovate, they may not face as much competitive pressures since its survival does not depend on finding ever more efficient methods of production or new and improved products. It thus lacks the willingness to innovate.	**E2:** Potential benefits may not materialise
In conclusion, whether government intervention will improve outcomes for society depends on several factors, including the level of contestability in the market and the type of government intervention applied. While a lack of competition can lead to higher prices and reduced innovation, there are cases where economies of scale and effective government intervention can ensure that consumers still benefit from lower prices and better-quality products. Contestability plays a crucial role in determining how competition, or the lack thereof, affects consumers. Contestability refers to how easily new firms can enter or exit the market, even if the market is currently dominated by one or a few firms. In highly contestable markets, dominant firms are incentivized to act competitively because of the threat of potential entrants. Knowing that setting prices too high or offering poor-quality products could invite new competition, dominant firms may reduce costs and pass these savings on to consumers, resulting in lower prices and better-quality products, even without actual new entrants. The mere threat of competition can drive innovation and efficiency, benefiting consumers. When considering government intervention, the most appropriate approach depends on the specific market conditions. In industries with natural monopolies or high barriers to entry, marginal-cost pricing (MC pricing) may be necessary to ensure fair pricing and improve allocative efficiency. However, in markets where competition can feasibly be introduced, encouraging competition may provide greater benefits to consumers. Policymakers must evaluate each market's unique characteristics and carefully weigh the pros and cons of different interventions to maximise consumer welfare.	**Summative conclusion**: [**S**TRAW] - Situation

Mark scheme

A	For a well-developed answer that has: • **Good scope** – explanation of <u>how</u> government intervention to curb market dominance can improve outcomes for society, of which one of the outcomes must be a reduction in allocative inefficiency. The concept of allocative efficiency should be clearly explained. • **Good rigour & application to context** – uses AR/MR framework and shows good contextualisation to the market for electricity
C	For an under-developed answer that: • Explains how a government policy can improve outcomes for society, but the said policy does not directly curb dominance • Only gives a descriptive explanation with some reference to context

K	For an answer that is largely descriptive, shows little or no application of economics, and contains conceptual errors.	
Evaluation		
E3	For a well-substantiated evaluation that uses economic analysis to arrive at a well-reasoned judgement on whether government intervention would improve consumer outcomes.	5
E2	For an answer that makes some attempt at a judgement on whether government intervention would improve consumer outcomes.	3-4
E1	For a largely unexplained judgement that addresses the question.	1-2

Question 4

4 Many countries around the world view boosting consumption as key to reviving their economies.

(a) Explain how a rise in consumption may have different impacts on national income of different countries. [10]

(b) Discuss the extent to which a country's real national income is the main determinant of the country's standard of living. [15]

Part (a)

Suggested Answer	**Key Points**
Consumption expenditure (C) refers to the planned spending on consumer goods and services by households. AD consists of four components - consumption expenditure by households (C), investment expenditure by firms (I), government expenditure (G) and net export expenditure (X-M). Any change in non-price factors that affect autonomous C will result in shifts of the AD curve and affect the country's national income. Assuming these countries are operating with spare capacity, a rise in autonomous consumption (C) will lead to a multiplied increase in national income due to the multiplier effect. The differing impacts on national income across countries result from variations in the size of their multipliers.	Introduction
R1: Explain how an increase in consumption affects the national income via through the workings of the multiplier effect Assume the country operates at below full employment level. When there is an increase in C and AD rise, there is a shortage of goods and services, and depletion of stocks. Firms will increase production and the national income will initially increase by the same amount as initial rise in consumption due to spending on factors of production such as labour and capital that are directly involved in the consumption. For example, when there is an increase in autonomous consumption of $10m, this will cause the income of the first group of recipients, factors of production such as workers directly related to this consumption, to rise by $10m. As this first group of recipients experience an increase in income of $10m, they will also increase their consumption. Assuming that the Marginal Propensity to Consume (MPC) is 0.5, this group of people will increase their consumption by $5m and the rest is withdrawn as spending on imports, savings and payment of taxes. This will lead to an increase in income for the second group of recipients, mainly the retailers, by $5m. This group of retailers (and also their workers) will also increase their consumption by 0.5X$5m=$2.5m which increases the income of the third group of recipients. The third group of recipients would increase their consumption by 0.5X$2.5m = $1.25m and this leads to an increase in income for the fourth group of recipients and so on. This process will go on until eventually the original increase in injection of spending leads to an equal increase in withdrawals and the multiplier process stops. The increase in AD due to the increase in autonomous consumption is shown by the rightward shift of the AD curve from AD_0 in Figure 1. Due to the multiplier effect as shown from the rightward shift from AD_0 to AD_{01} and AD_{02} and eventually to AD_1 the original increase in autonomous consumption result in a	Explain the impact of a rise in consumption on AD

multiplied increase in the national income from Y_0 to Y_1, which is equal to the product of the multiplier size and the original increase in consumption (=1/0.5 X $10m = $20m). The increase in real national income shows actual growth of the country.

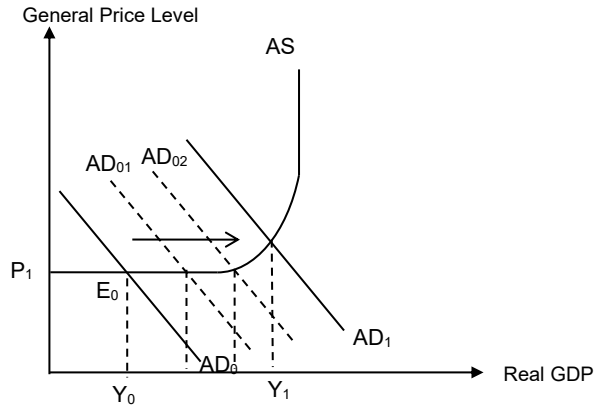


Fig 1: A rise in C leading to an increase in Real GDP

R2: The size of the multiplier differs in different countries which in turn affects the extent of the rise in AD.

Explain how a difference in the extent of a rise in K will affect the extent of impact on AD in different countries.

However, the size of the multiplier differs in different countries, which in turn determines the extent of rise in AD and its impact on national incomes of the country.

The size of the multiplier depends on the value of Marginal Propensity to Withdraw (MPW). MPW refers to the proportion of additional income that is withdrawn from the circular flow of national income. It is the sum of the Marginal Propensity to Save (MPS), Marginal Propensity to Taxes (MPT) and Marginal Propensity to import (MPM).

In general, k = $\frac{1}{MPW}$ = $\frac{1}{1-MPC}$

= $\frac{1}{MPS + MPT + MPM}$

(where MPW = MPS + MPT + MPM)

As seen in the formula, the smaller the MPC, the larger the MPW will be and hence the smaller the multiplier value is. This means that with an increase in autonomous expenditure, there is a smaller additional rise in induced consumption and hence a smaller rise in the national income.

For example, Singapore's multiplier value is likely to be smaller than the US. This is due to its higher savings rate and heavier reliance on imports. The higher marginal propensity to save (MPS) arises from a compulsory savings scheme through the Central Provident Fund (CPF) in which individuals contribute a portion of their gross income to the CPF. In addition, households

also save for precautionary and other purposes due to strong Asian saving culture. The higher marginal propensity to import (MPM) is due to Singapore's small and open economy. As Singapore lacks natural resources, there is greater reliance on imported goods and factors of production. Since the change in national income is equal to the product of the multiplier and the change in aggregate demand ($\Delta Y = k \times \Delta AD$), the increase in GDP will be smaller in Singapore compared to the United States. → MPM + MPS is high = MPW is large → K is small. Thus, given the same rise in consumption there will be a smaller rise in induced consumption and smaller further increase in national income due to large leakages. In contrast, the US has a larger multiplier value due to its significantly larger domestic market and its lower reliance on imports compared to Singapore. Moreover, MPS for US is also likely to be smaller than Singapore due to consumerism mindset. As a result, the US is more likely to experience a more significant boost in GDP following an increase in consumption, as compared to Singapore. Thus, given the same rise in consumption there will be a greater rise in induced consumption and greater further increase in national income – and small leakages Compare: MPC 0.5 (SG) vs MPC 0.8 (US) -and national income in the US compared to Singapore because of its larger multiplier size.	

(b) Discuss the extent to which a country's real national income is the main determinant of the country's standard of living. [15]

Suggested Answer	Key Points
Standard of living refers to the level of material (quantitative) and non-material (qualitative) well-being of an individual and household. The material standard of living measures the amount of goods and services that individuals within the country have available for consumption. Non-material standard of living refers to the quality of life and involves indicators such as the amount of leisure people consume, life expectancy, standard of education, level of pollution and other social factors. The real national income no doubt determines the standard of living of a country but so do other factors such as non-material factors including pollution, life expectancy and average years of schooling.	Introduction
R1: A country's real national income is a main determinant of a country's material standard of living. A country's real national income could directly affect its material standard of living. Real national income is the total monetary value of all final goods and services produced by an economy in a given period of time, typically a year, after adjusting for inflation. Having been adjusted for inflation, increase in real national income means that there is greater production and availability of goods and services for consumption. Individuals will have greater access to housing, food, leisure activities etc which satisfy more of their wants and thereby raising their material standard of living.	R1: An acknowledgment that a country's real national income is the key determinant of a country's material SOL
However, real national income alone is insufficient to determine a country's standard of living, as GDP per capita provides a more accurate measure of its material well-being. Real GDP per capita measures the amount of goods and services available to everyone in the country which reflects the level of purchasing power and consumption. For example, in 2024, the UK's nominal GDP per capita was projected to be around $50,096, while Singapore's was significantly higher at approximately $90,689 to $90,670. Since Singapore has a larger GDP per capita than UK, it suggests that on average, people living in Singapore can consume more goods and services and thus have a higher material standard of living than people living in the UK. Moreover, when a country experiences an increase in national income, it does not mean that everyone faces an increase in their material standard of living. In fact, income distribution may become more unequal as national income rises, with the rich becoming richer while the poor remain poor. This is evident in Singapore, where the GINI coefficient—a measure of income inequality ranging from 0 (perfect equality) to 1 (perfect inequality)— was 0.433 in 2023, before government transfers and taxes, which is considered relatively high for a developed country. This means that the increase in national income of a country is not enjoyed equally across different income groups in the country. The lower income group could be experiencing a decline in their real national income and material SOL.	Explaining the **limitations** of using real national income to measure a country's material SOL
Intermediate EV: For **developing economies**, achieving a higher level of national income is critical, as it ensures that the population's basic needs, such as food, shelter, and transportation, are met. At this stage of development, an increase in real national income has a direct and significant impact on the country's material living standards through higher levels of consumption. Higher national income	

also allows governments to invest in infrastructure, stimulate domestic demand, and create employment opportunities. **R2: Other factors, such as good governance, are important in determining the country's standard of living, including non-material standard of living.** Good governance is a significant determinant of a country's standard of living, as it lays the foundation for sustainable economic growth, social stability, and citizens' overall well-being. Only with good governance can rules and regulations be effectively enforced and administered. When governance is strong, policies are implemented consistently and resources are allocated efficiently, all of which contribute to higher productivity and a better quality of life, including non-material aspects of the standard of living. For example, having a higher level of national income may not always improve a country's standard of living. Producing higher levels of income and output can subject workers to stress and longer working hours, reducing leisure time and negatively affecting non-material aspects of well-being. Additionally, increased production may lead to higher levels of pollution and place greater pressure on the environment and infrastructure, which can further diminish the country's non-material standard of living and overall quality of life. Hence, good governance includes having to improve also the non-material factors in a country such as: • Controlling air Pollution / water / noise improve quality of life • Improving healthcare quality and access improve quality • Improving education and access to it • Work hours / leisure time / stress level / crime rate *(Elaborate on one or two points)* Controlling environmental issues such as air and water pollution, as well as reducing noise pollution, can significantly enhance the environment we live in and our overall well-being. Similarly, improving the quality of healthcare and ensuring wider access to medical services allows individuals to lead healthier, longer lives, while also reducing the burden of disease on society. Together, these non-material aspects create an environment where individuals can thrive both physically and mentally, highlighting that a high standard. **Intermediate EV:** However, given the **competing demands** on government resources, it is also the government's role to **determine priorities** and place greater emphasis on certain aspects of non-material SOL over others. For example, healthcare and education are frequently regarded as higher priorities because they directly influence both the quality of life and the country's non-material SOL, while other aspects, such as leisure or happiness, may be seen as secondary. **Summative Evaluation/Conclusion** Hence, whether national income is the main determinant of a country's standard of living depends largely on the stage of national development.	R2: Explaining that other factors also affect a country's non-material SOL

For **developed economies** that have already attained a relatively high level of national income, the focus should however be on non-material aspect. In such countries, factors like lower level of pollution, environmental sustainability, access to health and education facilities, and leisure time become more important determinants of quality of life. Thus, in developed economies, the pursuit of a higher standard of living requires going beyond material aspects to address the broader, non-material dimensions of human development. Nevertheless, there are exceptions, such as Bhutan, where per capita income remains relatively low, yet the nation ranks highly in non-material aspects of well-being, such as happiness, cultural preservation, and low stress levels. The Bhutanese example demonstrates that while economic prosperity is important, quality of life can also be achieved through policies that nurture non-material dimensions of human development.	

Question 5

5 China has set an economic growth target for this year of "around 5%" and pledged to pump billions of dollars into its ailing economy which is facing twin challenges of slowing growth and deflation.

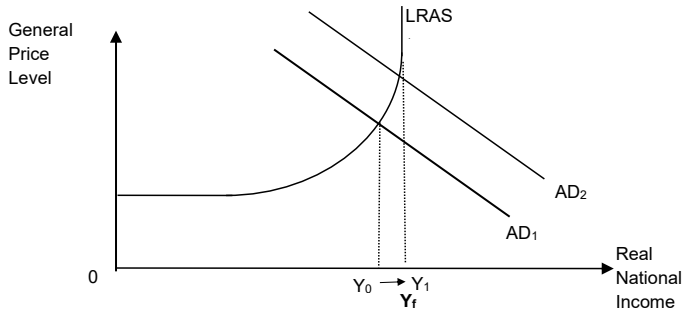
Source: *BBC*, 5 March 2025

(a) Explain why governments are concerned about slowing growth and deflation. [10]

(b) Discuss whether China's attempts to achieve its economic growth target by 'pumping billions of dollars' into its economy will be sufficient. [15]

Suggested answer for part (a)

Governments have four main macroeconomic aims that they seek to achieve: stable and sustained economic growth, price stability, low unemployment and a healthy balance of payments. China is facing a twin challenge of slowing economic growth, i.e. a decrease in real gross domestic product growth rate and deflation, i.e. a fall in the general price level (GPL). Both of these represent a failure to achieve its macroeconomic goals and may have compounding effects, resulting in a deflationary spiral and impact on standard of living and other macroeconomic objectives.	*Intro*
R1: Slowing economic growth will lead to a fall in standard of living and rise in demand-deficient unemployment. Slowing economic growth refers to a slower rate of increase in national output that is actually produced by the economy (i.e the real national output or real GDP). If the rate of increase in real GDP is less than the population growth rate, this would result in a decrease in real GDP per capita which would in turn indicate a fall in income of the average Chinese citizen and a lower ability to consume goods and services and hence a lower material standard of living for its citizens. In addition, slowing economic growth would mean a slower growth in the tax revenue collected by the government. Tax revenue provides the funding for the government to provide social services such as healthcare and education. A slower growth in tax revenue collected together with increasing societal needs may mean that the non-material standard of living or well-being of the average Chinese citizen may decrease. In addition, slowing economic growth may lead to slower growth in national output and production. This could result in a lower derived demand for labour and hence an increase in demand-deficient unemployment even as many young Chinese join the labour force after graduation.	***R1: Slowing economic growth will lead to a fall in standard of living and rise in demand-deficient unemployment.***
R2: Deflation would reduce consumer and business confidence, resulting in a further fall in national income and rise in unemployment. In the situation of deflation, the economy is facing a sustained decrease in general price level of goods and services. Consumers often delay purchases, expecting prices to drop further. Deflation can also erode consumer confidence as people fear job losses and income reductions. Similarly, deflation leads to expectations of lower prices in the future,	***R2: Deflation would reduce consumer and business confidence, resulting in a further fall in national income and***

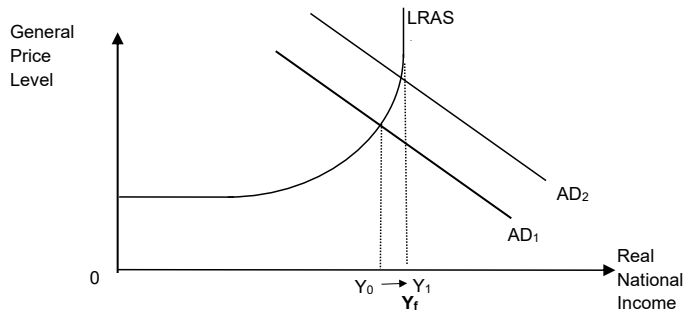
discouraging firms from investing in new projects, as the returns on investment may not be sufficient to cover costs. Lower consumer and business confidence would lead to a fall in consumption and investment expenditure, causing a fall in aggregate demand. With the accumulation of stocks, firms will reduce their production. The fall in production will cause a decrease in factor payment to workers and lower their household income. As a result, there is a fall in induced consumption on domestically produced goods and services. This will trigger rounds of fall in spending and re-spending and also a decrease in savings, payment of taxes and expenditure on imports. The multiplier process continues until the initial fall in injections is equal to the total decrease in withdrawals. This reverse multiplier process will henceforth cause a multiplied decrease in real nation income, causing negative growth. There will be unplanned stock accumulation and firms cut production, leading to multiplied fall in real national output and thus economic growth. Due to the rounds of fall in spending and re-spending, there will be lesser derived demand for labour at each cycle. Hence, there is a more significant increase in demand deficient unemployment as shown by the increasing gap between Y2- Yf.  Deflation also increases real interest rates and debt burden of borrowers. This discourages borrowing and in turn cause AD to fall further. Hence, once expectation of deflation sets in, deflation could spiral out of hand and the macroeconomic goals of sustainable economic growth and low unemployment are compromised. This is known as a deflationary spiral. Hence, combination of slowing economic growth and deflation would be of particular concern to the Chinese government.	***rise in unemployment.***

Level	Descriptor
L3	Well- developed explanation of the consequences of both slowing growth and deflation. Response should show contain an explanation of the deflationary spiral and be appropriate to the context of the Chinese economy.
L2	Well-developed explanation on either the consequences of slowing growth or deflation. This would be considered a one-sided response. OR

	Under-developed explanation of the consequences of slowing growth and deflation with limited attempt to explain the deflationary spiral and/or to the context of the Chinese economy.
L1	Some attempt to explain the consequences of slowing growth and/or deflation though the response would be underdeveloped and have conceptual errors (i.e. response would not have analytical rigour or accuracy)

(b) Discuss whether China's attempts to achieve its economic growth target by 'pumping billions of dollars' into its economy will be sufficient. [15]

Suggested answer for part (b)

Given the negative consequences of slowing growth and deflation, the Chinese government would need to intervene in the economy and has chosen to adopt expansionary fiscal policy by 'pumping in billions' into the economy to stimulate growth. Whether this will be sufficient will depend on the limitations of fiscal policy as well as other factors including external conditions.	***Intro***
R1: How expansionary Fiscal policy is sufficient to achieve China's economic growth targets An expansionary fiscal policy is one that increases AD and shifts the AD curve to the right. This is done through increasing government expenditure (G) and/or lowering tax rates (T). An increase in government spending increases the aggregate demand directly since G is a component of AD. The Chinese government plans to increase the deficit to 4% of national GDP and may decide to increase its expenditure on infrastructure such as improving the transport network (the 'Belt and Road' initiative). In addition, the government could consider lowering personal income tax and/or corporate taxes. When there is a reduction in personal income tax rates, disposable income increases and consumers will increase their spending on goods and services, resulting in an increase in C and thus AD. When there is a decrease in corporate tax rates, it means higher after-tax profits for the producers. This may induce them to utilise the higher profits for investment projects (e.g. purchase more machines) thus increasing AD.  Assume that the Chinese economy is operating below the full employment level and it experiences an increase in autonomous government investment of \$100m for the infrastructure and human capital. This will cause the income of the first group of recipients affected by this investment to rise by \$100m. This first group of recipients can include the workers and the suppliers of raw materials for the large-scale infrastructure project. As this first group of recipients experiences an increase in income of \$100m, they will increase their consumption. Assuming that the Marginal Propensity to Consume (MPC) is 0.5, this group of people will increase their consumption by \$50m and the rest is withdrawn as spending on	***R1: How expansionary FP works (H)***

imports, savings and payment of taxes. This will lead to an increase in income for the second group of recipients, mainly the retailers, by $50m. This group of retailers (and also their workers) will also increase their consumption by 0.5X$50m=$25m which increases the income of the third group of recipients. The third group of recipients would increase their consumption by 0.5X$25m = $12.5m and this leads to an increase in income for the fourth group of recipients and so on. This process will go on until eventually the original increase in injection of spending leads to an equal increase in withdrawals and the multiplier process stops. The increase in AD due to the increase in autonomous government investment on infrastructure and human capital is shown by the rightward shift of the AD curve from AD_0 in Figure 1. Due to the multiplier effect as shown from the rightward shift from AD_0 to AD_{01} and AD_{02} and eventually to AD_1 the original increase in autonomous government expenditure will result in a multiplied increase in the national income from Y_0 to Y_1, which is equal to the product of the multiplier size and the original increase in government expenditure (=1/0.5 X $100m = $200m). The increase in real national income shows actual growth of the country. Therefore, China's attempt to achieve its economic growth targets using expansionary FP will be sufficient. In addition, there would be an increase in the general price level, which would help the economy to escape deflation.	
However, the effectiveness of expansionary fiscal policy depends on the size of the multiplier which in turn depends on households' marginal propensity to save. Chinese households save about 30–35% of disposable income, among the highest in the world. This means that a third of any increase in disposable income is saved instead of being spent which limits each successive round of increase in consumer expenditure and the eventual increase in NY. A second limitation is the crowding-out effect. The Chinese government is funding its budget deficit by increasing its borrowing, with total new government debt reaching RMB 11.86 trillion (USD 1.66 trillion). If the government is borrowing from banks, interest rates may be driven up. The higher cost of borrowing loans reduces borrowing by firms/households leading to reduced investment spending and consumer spending respectively. This dampens the expansionary effect of the initial rise in government expenditure on the economy. Hence, expansionary fiscal policy alone may not be sufficient to help the government to reach its growth targets.	***Limitations of expansionary FP***
Fiscal policy is largely sufficient under current economic situation in China. Given the economic challenges of slow growth and inflation, the weak outlook is likely to make boosting domestic consumption and private investment difficult. Hence, fiscal policy via direct government spending therefore serves as a direct mechanism to increase aggregate demand, allowing fiscal expansion to rapidly accelerate real GDP growth toward target levels in the short run.	***Intermediate EV for R1***

R2: Alternative demand management policy to achieve EG targets The government may want to consider exchange rate policy, by depreciating the Chinese yuan. A depreciation of the exchange rate results in a decrease in the foreign price of exports and an increase in the domestic price of imports. Quantity demanded for exports rise while quantity demanded for imports falls. The impact on net exports depends on the price elasticities of demand for both exports and imports. Given that Chinese exports face numerous substitutes in the global marketplace, demand for Chinese exports is likely to be price elastic (PEDx > 1). Thus, assuming the Marshall-Lerner condition is satisfied where (PEDx + PEDm > 1) the currency depreciation will improve China's trade balance. The resulting increase in net exports (X-M) will boost AD, which subsequently raises national output through the multiplier effect. This mechanism provides China with an effective tool for achieving its economic growth targets, as the improved competitiveness from depreciation translates into higher export revenues and stronger overall economic performance.	***R2: Alternative demand management policy to achieve EG targets (e.g. depreciation or MP)***
However, the rising trade tensions between China and the US (e.g. increasing US tariffs on Chinese imports) has already caused a decrease in demand in Chinese exports. In addition, China's trading partners may view depreciation of the yuan as a 'protectionist' measure and may retaliate by depreciating their own currencies and/or imposing other forms of trade barriers. Given the challenging global trade situation, China may not be able to count on increasing AD via net exports.	***Limitations***
Economic Situation Nonetheless, ER policy is important in helping China to achieve its growth targets in addition to FP. This is because China remains heavily dependent on manufacturing exports, where price competitiveness is crucial. Given China's massive manufacturing capacity and established global supply chains, net exports forms a large proportion of AD. A weaker yuan will potentially boost export volumes significantly. As such, fiscal policy primarily increases domestic demand through government spending and investment while depreciation enhances external demand through improved export competitiveness. Together, they provide a more balanced approach addressing both domestic and international sources of growth to meet their macro targets.	***Intermediate EV***
In conclusion, it is unlikely that China's attempts to meet its growth targets by 'pumping billions of dollars' into its economy will be sufficient given the lackluster domestic consumption. In addition, China faces demographic challenges such as an aging population and high youth unemployment, both of which would lower domestic consumption. In addition to short-term demand management policies, the Chinese government would need to address the underlying structural issues that have lead to a high savings rate (e.g. the high cost of education and healthcare). This would help to increase domestic consumption and help the economy to achieve its growth targets.	***Summative Conclusion STRAW*** ***Root Cause***

For this question, 5 marks are allocated for evaluation. Your evaluation is assessed based on this rubric:

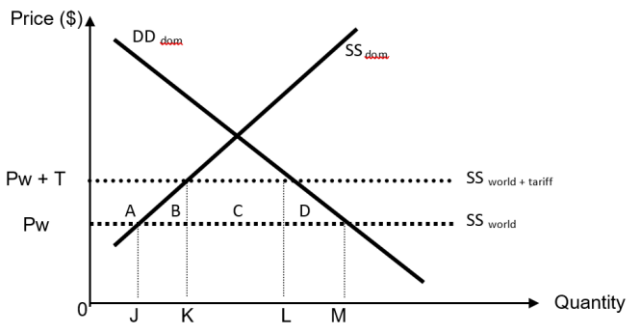
	Evaluation
E3	A well-explained evaluative judgement about **both requirements** PLUS an overall summative conclusion leading to a well-explained evaluative judgment on whether expansionary FP is sufficient to achieve China's economic growth targets.
E2	A well-explained evaluative judgement about both requirements. OR Well-explained evaluative judgement about **one** requirement PLUS a learned evaluative statement for the second plus a **summative conclusion.** **Well-explained** evaluative **judgement** about **one** requirement PLUS a learned evaluative **statement** for the **second.**
E1	A learnt evaluative **statement** for t**wo** requirements OR a **well-explained** evaluative j**udgement** about **one** requirement. A learnt evaluative statement for **one** requirement.

Question 6

6 Free trade, when mutually beneficial, has driven significant economic progress for many countries. However, protectionist sentiments are rising globally as nations seek to shield domestic industries from foreign competition and supply chain vulnerabilities.

(a) Explain one reason for protectionism and how protectionism could have a negative impact on consumers and producers. [10]

(b) Discuss whether signing more free trade agreements is the best measure for Singapore to achieve its macroeconomic objectives in the face of rising protectionism. [15]

Suggested answer for (a)	
Protectionism refers to government intervention to restrict or limit international trade in order to protect domestic industries from foreign competition. Some examples of protectionist measures include tariffs, quotas, subsidies and regulatory barriers.	Introduction
Maintaining employment is likely to be a major reason for protectionism, especially during a worldwide recession. In particular, retrenchment and unemployment is likely to be significant in export-led industries due to the fall in global demand and consequent fall in production. Hence countries might turn to protectionist measures such as tariffs to shift consumption away from imports to domestically produced goods, so that there is increase in domestic production and employment of workers. The diagram below illustrates the case of a good that is partly home produced and partly imported. Domestic demand and supply curves are DD_{dom} and SS_{dom} respectively. Pw is the world price where the country can buy all it wants and SS_{world}, the world supply curve, is perfectly price elastic. At price Pw the quantity demanded is M. Of this, OJ is produced locally and JM is imported.  Assume the government imposes a tariff T. This shifts the world supply curve to the country by the amount of the tariff. The effective horizontal world supply curve thus shifts up to $SS_{world + tariff}$ and price rises to Pw+T. At this price, domestic consumption falls to L and domestic production rises to K. As firms increase production, they would hire more workers and thus	**R1**: Explain 1 reason for protectionism

increase the level of employment in the country, helping to reduce the unemployment caused by the pandemic. **<u>Alternative reason</u>** A possible reason for protectionism is the protection of infant industry argument. An infant industry can be defined as an industry which is in its early stages of development and have potential comparative advantage. For example, the solar panel industry was deemed as an infant industry in China in the 2010s. They are considered in need of some form of protectionist measures in order to survive and successfully compete against foreign established firms that are bigger, long-standing and more efficient. Infant industries being in the early stage of growth, are often small, unable to reap economies of scale and have limited access to finance. As such their average costs of production are high and they cannot produce as cheaply as the mature foreign producers, losing out in price competitiveness and thus not being able to compete effectively. Governments may thus protect these industries by imposing tariffs which will increase the price of imports, thereby reducing the price difference between the domestic infant industries and the foreign producers and allowing the infant industries to compete.	
However, protectionism measures such as import tariffs would increase the price of goods and services and reduce the variety and quantity of imported goods and services in the economy. Consumer will be worse off due to lower consumers' surplus and the lower variety of goods and services. From the diagram above, the tariffs cause prices of goods to increase to Pw+T. Consumers have to pay higher prices and the loss in consumer surplus is shown from area A,B,C and D. Furthermore, tariffs to protect one industry may hurt other producers in the economy. For example, tariffs imposed by US on steel imports help to maintain employment in American steel-producing industries. But jobs saved in steel-producing industries are achieved at the cost of jobs lost in other industries such as US machines manufacturers that used imported steel as an input in production. US machines manufacturers faced an increase in costs of production resulting in the loss of export price competitiveness of their machines in the international market. With a fall in quantity demanded for US machines, the output and employment level fall, resulting in a significant number of workers in the machines manufacturing industry being unemployed. Trade barriers will also cause job losses in other supporting industries. As the volume of steel imports falls, workers who are in the distribution and transportation industries (e.g. workers in the logistics and port industry) will possibly face the risk of unemployment too.	**R2**: Explain 1 negative impact on consumers Explain 1 negative impact on producers

Mark scheme

A	Use of tariff diagram to explain the reason for protectionism and/or the cost to consumers Reasons that do not require the tariff diagram are well elaborated Negative impact on producers is clearly explained with clear end-point on profits.
C	Descriptive explanation of the reason for protectionism and the negative impact on consumers and producers
K	Smattering of points that are mostly statements rather than explanation

(b) Discuss whether signing more free trade agreements is the best measure for Singapore to achieve its macroeconomic objectives in the face of rising protectionism. [15]

Requirement 1: Explain how signing of more FTAs is the best measure for Singapore to achieve its macro goals in the face of rising protectionism.

Requirement 2: Explain one alternative measure that the Singapore government could implement to achieve its macro goals in the face of rising protectionism.

Suggested answer for (b)	
Trade is Singapore's main engine of growth due to its small domestic market and limited resources. The Singapore government has pursued a policy of free trade to achieve economic growth beyond its domestic economic resources. Being a small and open economy with limited resources, Singapore is the world's most trade-dependent nation with a trade to Gross Domestic Product (GDP) ratio of 337%. In the face of rising protectionism, Singapore's active participation in FTAs is crucial for improving her competitiveness in order to maintain economic growth and employment. Singapore should also explore other measures such as supply side policies to have a more sustainable impact on her competitiveness to achieve its macroeconomic objectives.	Introduction
Bilateral or regional trade agreements often involve the reduction or elimination of tariffs on goods traded between the participating countries. This means that Singapore exporters can enjoy preferential access to partner markets, making their products more price-competitive compared to goods from countries that are not part of the agreement. With exports becoming relatively cheaper, foreign consumers would then switch from buying domestic goods to buying more of a country's exported goods. This can lead to an increase in the export revenue and improve a country's balance of trade assuming import expenditure is constant or does not increase by a greater amount. This increase in export sales would also be reflected as an increase in the net export component in aggregate demand. This would result in an unplanned depletion of inventory, causing firms to increase output in the next time period. This increase would be multiplied as the initial increase in national income would lead to further increases in induced consumption therefore increasing aggregate demand once more. This continues until the initial increase in AD is matched by an equal increase in withdrawals leading to an outcome of a multiplied increase in Real GDP. This is reflected in Figure 2 as an increase in aggregate demand from AD_1 to AD_2 with a corresponding increase in real GDP of Y_1 to Y_2. While achieving economic growth, this increase in output also leads to an increase in derived demand for labour as more labour is needed to increase production. This would then have the effect of lowering demand-deficient unemployment and helping Singapore achieve the goal of low unemployment rates.	**R1**: Explain how FTAs can help to achieve various macro goals. Impact on Economic growth and Employment

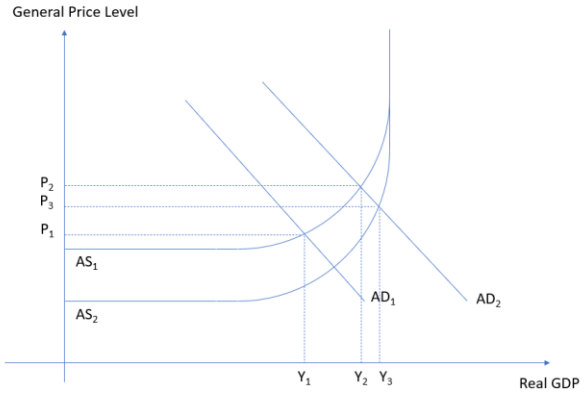


Fig 2. Impact of FTAs on macroeconomic objectives.

Impact on Price stability

Furthermore, FTAs can also reduce barriers to importing factors of production. Singapore is heavily dependent on imported factors of production. Signing more FTAs enable Singapore to source for more FOPs and the increased availability in factors of production would lead to lower prices and thus cause a fall in cost of production. This would be reflected as an improvement in the short run aggregate supply curve from AS_1 to AS_2 as firms are more willing and able to supply goods at every price level. This then leads to a surplus of goods and services, causing downward price pressure reflected as a fall in the general price level from P_2 to P_3. This not only helps to relieve inflationary pressures; it also can achieve economic growth as the aggregate demand increases when GPL decreases.

Impact on FDI and sustaining competitiveness

Many FTAs focus on reducing non-tariff barriers such as licensing rules, custom procedures etc. these hidden costs can make importing intermediate goods more expensive. Hence with FTA and removal or streamlining some of these rules, there will be lower transaction and compliance costs, helping to reduce the cost of importing factors of production.

Finally, bilateral or regional trade agreements often include provisions related to investment and cooperation. Increased business confidence and access to foreign markets may lead to an inflow of FDI as firms are incentivised and more at ease to establish operations in FTA-partnered countries. These provisions can attract foreign direct investment (FDI) from the partner country, leading to technology transfer, knowledge sharing, and improvements in production techniques. In addition, increased competition from the partner country's producers can drive Singapore's businesses to become more innovative and efficient. The need to compete on price and quality can lead to the adoption of new technologies, improved processes, and better management practices, ultimately enhancing overall price and non-price competitiveness.

Limitations

However, signing more FTA might make Singapore more vulnerable to external shocks that affect its trading partners. A fall in the incomes of our trading partners would lead to a fall in world consumption leading to a fall in demand for Singapore's exports and fall in its export-led growth and

employment in such industries. The increased interconnectedness with more countries could also expose Singapore to greater supply chain disruptions.	
Nevertheless, it is exactly the emergence of greater interconnectedness and rising protectionism that Singapore has to diversify and seek out new and more trading partners. In this way, she might become less susceptible to global supply chain disruptions or changes in international market conditions that could lead to shortages of goods and increased prices. Hence, having more alternative suppliers will mean that Singapore is able to source for raw materials easier from alternative markets that will help to ensure price competitiveness is not affected. Having more markets to sell her exports to also reduces her vulnerability to protectionist measures by existing trading partners.	**E1**: Evaluating the limitations of FTA
FTAs may not be the best measure as Singapore may need to continue with supply side polices to reduce its cost of production to increase price competitiveness and to improve her non-price competitiveness in the face of rising protectionism. With rising protectionism and the ongoing trade war between the US and China, both countries' economic growth would slow down and their demand for Singapore's exports may fall. Singapore has to make its exports more price competitive and affordable in order to maintain its net export revenue (X-M). A skilled and adaptable workforce is essential for maintaining export price competitiveness in the longer run. Supply-side policies such as the refreshed CET (Continuing Education & Training) Masterplan would ensure a more competitive and career resilient workforce. It will enable working adults, regardless of their starting qualifications, to continue to build and deepen their skills and competencies, throughout their careers. Furthermore, the Skills Future Mid-Career Enhanced Subsidy (MCES) supports and encourages lifelong learning for mid-career individuals that may face greater challenges in undertaking training. Well-trained workers can improve productivity; thus, firms can hire less workers or use less factors of production to produce the same output, leading to a fall in unit cost of production. Due to the fall in unit cost of production, AS would rise from AS0 to AS1 (Figure 3). Firms will then pass the cost savings on by lowering the price of their goods and services, leading to a fall in GPL from P_0 to P_1. This will improve price competitiveness of goods and services. A skilled and productive workforce will also make Singapore a more attractive destination for foreign direct investment, helping Singapore to achieve sustained economic growth and also creation of more job opportunities. However in some cases, acquiring new skills takes time and consistent effort. Employees might resist upskilling due to a fear of change, a lack of interest in learning new skills, or a belief that their current skills are sufficient. Such resistance can hinder the adoption of new skills and limit the potential for innovation, therefore hindering the improvement in productivity and product innovation.	**R2**: Explain how SS-side policy through training and continued education can help Singapore increase its competitiveness and achieve its macro goals **L**imitations
The CET Masterplan and SkillsFuture have been in place for more than a decade and Singapore workers generally appreciate the value of continued education. Resistance to training is not a significant problem in Singapore.	**E2**: Evaluating the

Furthermore, Singapore frequently suffers from labour shortages and is facing an ageing population. Thus, improvements in labour productivity are vital in compensating for higher labour costs and shrinking productive capacity.	Limitations of skills training
In the landscape of growing protectionism, signing more FTAs will likely be the best measure Singapore should implement to increase competitiveness. While protectionist measures can hinder the flow of goods and services globally, signing more FTAs provide a counterbalance by maintaining open and free trade between participating countries. Furthermore, because FTAs cover a range of sectors, by signing more bilateral or regional trade agreements, such diversification can help mitigate the adverse effects of global protectionism trend. FTAs provide a range of economic benefits that make a country more attractive to foreign investors. As a result, countries that actively participate in and leverage their FTAs often experience a boost in foreign investment inflows, which can bring new technology and knowledge. This will still ensure Singapore can increase its competitiveness with favourable trade agreements. Singapore may be faced with non-tariff barriers such as quotas, licensing requirements, and technical standards. These barriers can sometimes be more restrictive than tariffs, and even with supply side policies, may not allow Singapore to gain global competitiveness as she is not able to export beyond i.e., quota amount. Signing more FTAs can remove such barriers for Singapore. However, Singapore must take both a short- and longer-term perspective in dealing with competitiveness, whether threatened by protectionism or otherwise. FTAs can lead to immediate market access and trade benefits, which might be beneficial for driving short-term competitiveness. Supply-side policies, on the other hand, focus on long-term structural improvements that drive sustained competitiveness. A synergistic approach is much needed as FTAs can only facilitate market access and provide opportunities for export-oriented industries, but Singapore will need supply-side policies to enhance the country's ability to take advantage of these opportunities by improving the quality and price-competitiveness of its products and services.	**E3**: Summative conclusion

Mark scheme

A	• Developed explanation of how signing more FTAs and at least another alternative measure should be implemented to increase both Singapore's price and non-price competitiveness and achieve its macro goals. • Choice and explanation of FTA and alternative policy must make reference to the context of "rising protectionism" as given in the question.
C	• Underdeveloped explanation of how signing more FTAs and at least another alternative measure should be implemented to increase both Singapore's price and non-price competitiveness and achieve its macro goals. • Answer lacks reference to the context of "rising protectionism" - links to price and non-price competitiveness may be unclear. OR

	Developed explanation fulfilling only 1 question requirement, or only 1 measure is well explained.
K	Demonstration of some knowledge of policies –
E3	Well-reasoned consideration of the policy choices and evaluation of their relevance based on time frame, nature of economy etc. Contextualised to Singapore.
E2	A conclusion that addresses the question, though explanation of judgement may not be complete.
E1	Superficial evaluative statement(s) without supporting analysis and elaboration.