

TEMASEK JUNIOR COLLEGE  
2024 JC2 PRELIMINARY EXAMINATIONS  
Higher 2



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**ECONOMICS****9570/02**

Paper 2

**10 September 2024****2 hours 30 minutes**

Additional Materials: **six 4-page** answer booklets

**READ THESE INSTRUCTIONS FIRST**

Answer booklets will be provided with this question paper. You should follow the instructions on the front cover of the answer booklet. If you need additional answer paper ask the invigilator for a continuation booklet.

Answer **three** questions in total, of which **one** must be from Section A, **one** from Section B and **one** from **either** Section A or Section B.

Begin each question on a fresh answer booklet.

Indicate the question number clearly in your answers.

The number of marks is given in brackets [ ] at the end of each question or part question.

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This document consists of **3** printed pages and **1** blank page.

Answer **three** questions in total.

**Section A**

**One or two** of your three chosen questions must be from this section.

- 1 On the back of a weaker yen, the prices of hotel accommodation have surged as more tourists are visiting popular attractions such as islands and heritage sites in Japan. In response, local governments in Japan are considering implementing a tourist tax on these places to help deal with overtourism.
  - (a) Explain **two** possible reasons for this surge in the prices of hotel accommodation in Japan. [10]
  - (b) Assess the combined effects of the implementation of a tourist tax and a rise in incomes on consumer expenditure of different types of hotel accommodations. [15]
  
- 2 National defence has been used as an example of public good while research and development (R&D) is an example of a production activity that generates positive externality. To promote R&D, the government is considering the enforcement of patents. However, there are concerns that this could prevent potential competitors from entering the industry.
  - (a) Explain why national defence and R&D, if left to market forces, might be allocated inefficiently. [10]
  - (b) Discuss the factors that a government should consider when deciding to enforce patents to achieve a more efficient allocation of resources in the market for R&D. [15]
  
- 3 The electricity industry in Singapore used to be a monopoly until 1998, where the government intervened in the industry. The industry has since faced several challenges, with an increase in prices of oil and gas in 2021 leading to several electricity retailers ceasing operations.
  - (a) Explain how the rising costs of oil and gas would affect electricity retailers and how it would influence their decision to cease operations. [10]
  - (b) Discuss whether government intervention in Singapore's electricity market would necessarily improve consumer outcomes. [15]

## Section B

**One or two** of your three chosen questions must be from this section.

**4** As part of its efforts to tackle climate change, Singapore will be spending US\$20 million to construct the world's largest facility to boost the ocean's ability to absorb carbon dioxide (CO<sub>2</sub>) from the atmosphere. Meanwhile, the US spent US\$3 billion to install zero emissions equipment and technology to reduce air pollution at ports.

- (a) Explain how an increase in government expenditure can lead to a bigger change in national income and how such spending may have different impacts on aggregate demand for two different countries. [10]
- (b) Assess whether an increase in government expenditure is likely to be the best policy to attain inclusive and sustainable growth in Singapore. [15]

**5** Consumer prices in Singapore rose by 6.1 percent in 2022, the fastest rate of increase since 2008. This dramatic rise in inflation was driven by a range of factors – the global economic rebound, and global supply chain disruptions.

Source: Monetary Authority of Singapore, Jan 2023

- (a) Explain how the global economic rebound and global supply chain disruptions might have consequences on Singapore's aggregate demand and aggregate supply. [10]
- (b) Assess whether the policies designed to achieve price stability would inevitably result in trade-offs for Singapore's economy. [15]

**6** The Regional Comprehensive Economic Partnership (RCEP) is the first free trade agreement (FTA) among the largest economies in Asia, including China, Indonesia, Japan and South Korea. The 15 RCEP participating countries represent almost half of the world's population and a total of 30 per cent of global GDP.

- (a) Explain **one** benefit and **one** cost of the removal of tariffs on consumers and producers. [10]
- (b) Discuss the likely impact of signing a free trade agreement (FTA) on an economy. [15]

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**Question 1**

On the back of a weaker yen, the prices of hotel accommodation have surged as more tourists are visiting popular attractions such as islands and heritage sites in Japan. In response, local governments in Japan are considering implementing a tourist tax on these places to help deal with overtourism.

- (a) Explain two possible reasons for this surge in the prices of hotel accommodation in Japan. [10]
- (b) Assess the combined effects of the implementation of a tourist tax and a rise in incomes on consumer expenditure of different types of hotel accommodations. [15]

Part (a) Question interpretation

Command word/ phrase	Explain	To account for, using economic reasoning and tools of analysis
Content	Two possible reasons... surge in the prices	To explain the surge (very large increase in price), demand, supply and elasticity factors are relevant. Given that the weaker yen (from preamble) is a demand factor to explain the price increase, the relevant elasticity concept to explain the extent of the increase is PES.
Context	Hotel accommodation in Japan	To apply to the hotel accommodation in a foreign country Japan by using information from the question stem (preamble).

*This question requires students to explain two reasons for the surge in price using weaker yen as a demand factor and the elasticity concept PES. The recognition that tourism and hotel accommodation are complementary goods is needed, and relevant diagram(s) should be included.*

**Introduction**

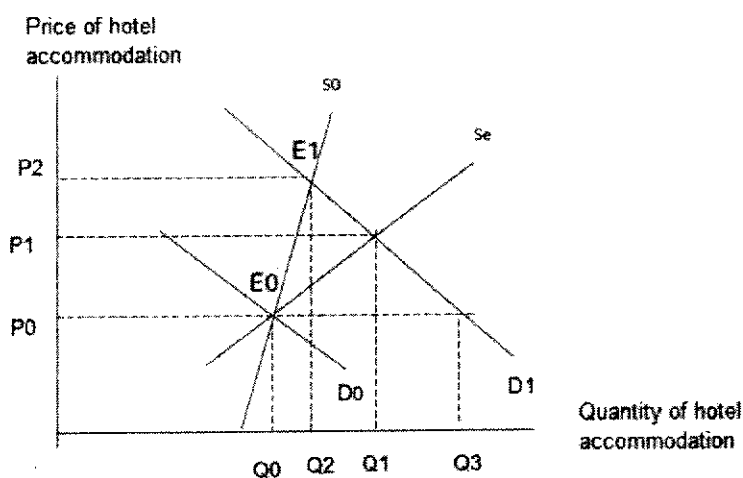
**[Outline approach]** To explain the surge in the prices of the hotel accommodation, concepts of demand and supply, and elasticity factors are relevant. The weakening of the yen from the preamble is one possible demand factor that can explain the increase in the price of hotel accommodation in Japan, and the price inelastic supply of Japan's hotel accommodation will explain the large increase in price.

- **Key Argument 1: One reason to explain the increase in the prices of the hotel accommodation in Japan is the rise in demand for hotels given the weaker yen.**
- Demand is the willingness and ability of consumers to purchase a good at a specific price per period of time.
- With a weaker yen, foreigners will now find their currencies to have appreciated relative to Yen. As the prices of domestic price of goods and services are now cheaper in Japan compared to the rest of the world, tourists have higher purchasing power, and more tourists will visit Japan as it is cheaper to travel there.

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- Tourism and hotel accommodation are **complementary goods** (goods in **joint demand**), which tends to be consumed together, and brings higher combined utility than when consumed individually. Thus, as prices of tourism fell, there will be an increase in the demand for hotel accommodation as shown by a rightward shift of the demand curve from  $D_0$  to  $D_1$ .
  - **[Explain the M.A.P]** At the initial equilibrium price  $P_0$ , the quantity demanded ( $Q_3$ ) will exceed quantity supplied ( $Q_0$ ), leading to a shortage of  $Q_3 - Q_0$  units of hotel accommodations in Japan.
  - The shortage will lead to an upward pressure on price as consumers bid higher prices for the hotel accommodation given the shortage.
  - As price increases from  $P_0$  to  $P_2$ , hotel operators will increase quantity supplied, while consumers will reduce quantity demanded, until the new equilibrium price and quantity is reached at the higher price of  $P_2$  and  $Q_2$  respectively.
  - This thus explains the increase in prices of hotel accommodation in Japan.
- 
- **Key Argument 2: The second reason to explain the surge in the prices of hotel accommodation in Japan is the price inelastic supply of hotel accommodation.**
  - Price elasticity of supply measures the degree of responsiveness of quantity supplied of a good to a change in its price, ceteris paribus.
  - Supply of hotel accommodation is likely to be price inelastic ( $0 < PES < 1$ ) as it takes time to apply for license, find a suitable place and to construct the hotels. This is shown by a steeper supply curve  $S_0$ .
  - Therefore, an increase in the price of hotel accommodation from the earlier rise in demand will lead to a less than proportionate increase in the quantity supplied of this good as producers are less responsive to the increase in price.
  - For the same increase in demand from  $D_0$  to  $D_1$ , the increase in price is more significant for a price inelastic supply (increase from  $P_0$  to  $P_2$ ) instead of  $P_0$  to  $P_1$  where supply is more price elastic.
  - This thus explains the surge in prices of hotel accommodation in Japan.

**Figure 1: Surge in price of hotel accommodation**



**Conclusion (optional)**

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- In conclusion, the two possible reasons are the weakening of the yen that explains the increase in demand for hotel accommodation in Japan as more foreigners are now choosing Japan as a popular travel destination as compared to other Asia countries such as Taiwan and South Korea, and the price inelastic supply of hotel accommodation is likely to be price inelastic due to the time period and complexity of the production process of building hotels.

Part (a) Mark scheme

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that has: <ul style="list-style-type: none"> <li><b>good scope</b> – analyses the increase in demand and PES &lt;1 to explain the surge in prices; and</li> <li><b>good rigour</b> – utilises DD/SS analysis, diagram and Market Adjustment Process together with PES concept; and</li> <li><b>good application to context</b> – explains with examples (good use of preamble) related the market for hotel accommodation in Japan.</li> </ul>	8 – 10
L2	For an under-developed answer that: <ul style="list-style-type: none"> <li><b>lacks scope</b> – analyses the increase in demand without explaining joint demand and/or PES; and/or</li> <li><b>lacks rigour</b> – gives a descriptive explanation of how surging prices arise; and/or</li> <li><b>lacks application to context</b> – explains without application to context of the hotel accommodation market.</li> </ul>	5 – 7
L1	For an answer that is largely descriptive, shows little or no application of economics, and contains conceptual errors.	1 – 4

- (b) Assess the combined effects of the implementation of a tourist tax and a rise in incomes on consumer expenditure of different types of hotel accommodations. [15]**

Part (b) Question interpretation

<b>Command word/phrase</b>	<i>Assess...combined effects</i>	To consider different perspectives of the combined effects of a tourist tax and a rise in the incomes on consumer expenditure on different types of hotel accommodation and come to a reasoned judgement on the likely effect.
<b>Content</b>	<i>A tourist tax Rise in incomes Consumer expenditure</i>	<i>Demand, XED and YED would be relevant concepts.</i> Both implementation of a tourist tax and a rise in income influence the demand of hotel accommodations. Consumer expenditure (TE) = P X Q. The extent of impact on CE would depend on the XED and YED values of the different types of hotel accommodation.
<b>Context</b>	<i>Different types of hotel Accommodation in Japan</i>	The different types of hotel accommodation can be categorised as such: 1. Weak/strong complements to tourism attractions to determine the XED values

		2. Nature of the good to determine the YED values; 5-stars hotels can be considered as (normal) luxury hotels while business can be considered as (normal) necessities. Budget/capsule hotels can be perceived as inferior goods.
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### Introduction

- **[Define key terms]** Consumer expenditure is the product of equilibrium price and quantity ( $TE = P \times Q$ ).
- Cross elasticity of demand (XED) measures the degree of responsiveness of the demand for a good to a change in the price of another good, ceteris paribus.
- Income elasticity of demand (YED), which measures the degree of responsiveness of the demand for a good to a change in the income of consumers, ceteris paribus.
- **[Outline approach]** XED can be used to explain the extent of the leftward shift of a fall in demand for hotel accommodation due to the tourist tax on different places of interest in Japan. YED is useful in analysing the impact on demand for normal and inferior hotels and subsequently, the impact on consumer expenditure.

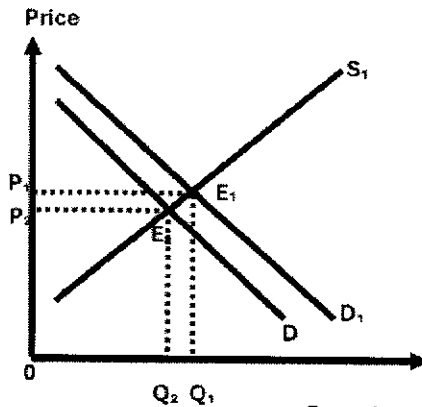
### **Key Argument 1: Analyse the impact of a tourist tax on consumer expenditure for different types of hotels.**

- **A tourist tax will lead to fall in consumer expenditure for different hotel types.**
- The implementation of a tourist tax increases the price of visits to heritage sites and islands in Japan, hence reducing the quantity demanded for these tourist attractions.
- Since hotel accommodations and tourist attractions are **complementary goods** as they tend to be consumed together, there will be a **fall in demand** for hotel accommodation. This results in a fall in both price and quantity of hotel accommodation and hence a fall in consumer expenditure.
- **[Magnitude]** The extent of the fall in total expenditure depends on **strength of the relationship** between the different tourist attractions and hotel accommodation, which will then affect the XED value between the price of the visits to the various tourist attractions and the demand for hotel accommodation.
- Visits to heritage sites that only require a half day trip are considered a weak complement to hotel accommodation near these places. The XED value is likely to a small negative value.
- An increase in the price of the visits to heritage sites will lead to a less than proportionate fall in the demand for hotel accommodations.
- Thus, the extent of this leftward shift of the demand curve for hotels in these areas are less significant, leading to a small fall in the consumer expenditure from 0P1E1Q1 to 0P2E2Q2 (Figure 2a).
- Visits to islands with many tourist attractions would require more than a day's tour, hence tourists are more likely to stay overnight or longer. In this case, such hotels located in these areas are considered stronger complement goods to these tourist attractions. The XED value is likely to a larger negative value.
- An increase in the price of the island visits will lead to a more than proportionate fall in the demand for hotel accommodations.
- Thus, the extent of this leftward shift of the demand curve for hotels in these areas are more significant, leading to a relatively larger fall in the consumer expenditure from 0P1E1Q1 to 0P3E3Q3 (Figure 2b).



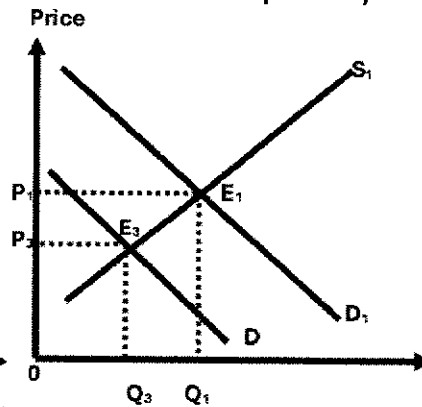
2024 TIC JC2 H2 Prelim Suggested Answer with Comments

**Figure 2a low XED value  
(weak complement)**



Quantity of hotel  
accommodation  
near heritage  
sites

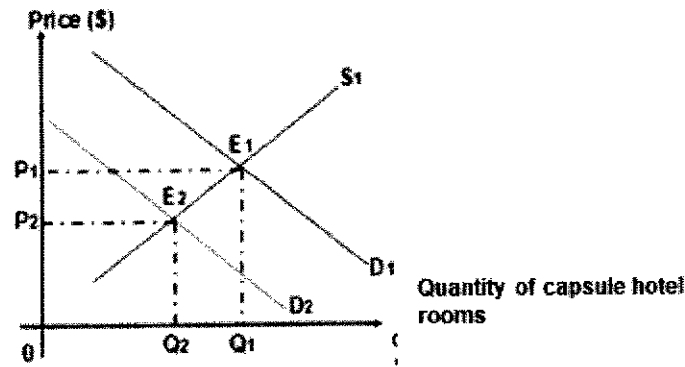
**Figure 2b high XED value (strong  
complement)**



Quantity of hotel  
accommodation in  
islands

**Key Argument 2: Analyse the impact of a rise in income on consumer expenditure for normal goods (luxury and business hotels) and inferior good (budget hotels and capsule hotels)**

- A rise in incomes will increase the purchasing power of consumers, leading to an increase in the demand for hotel accommodations that are considered normal goods such as 5-stars hotels like Hilton where  $YED > 1$  and business hotels such as APA where  $0 < YED < 1$ .
- As demand increases, both the equilibrium price and quantity will increase, leading to an increase in total consumer expenditure.
- **[Magnitude]** The extent of the increase in consumer expenditure will depend on the magnitude of the YED values.
- For (normal) luxury hotels with  $YED > 1$ , where the degree of necessity is low and the price of the hotel accommodation makes up a larger proportion of income, an increase in incomes will lead to a more than proportionate increase in demand for luxury hotels. Therefore, the total expenditure will increase more significantly.
- For business hotels where  $0 < YED < 1$ , where the degree of necessity is high and it makes up a smaller proportion of income, an increase in incomes will lead to a less than proportionate increase in demand for luxury hotels. Therefore, the total expenditure will increase less significantly.
- **[Situation]** For the case of inferior good such as capsule hotels with less space, no frills and shared bathrooms,  $YED < 0$ . Such hotels likely provide a poorer quality experience.
- A rise in income will lead to a fall in demand for such hotels as with higher purchasing power, consumers are likely to switch to better quality hotel accommodations. Therefore, the total consumer expenditure for such hotels are likely to fall from  $OP_1E_1Q_1$  to  $OP_2E_2Q_2$  as there will be a leftward shift of the demand curve from  $D_1$  to  $D_2$  as seen in Figure 3.

**Figure 3: Fall in demand with rising income for inferior hotels****Evaluative Conclusion – analyse the combined effect for the stand**

- **[Stand + Magnitude]** Given that the normal luxury 5-stars hotel will see a more than proportionate rise in demand and hence significant increase in consumer expenditure, this will likely outweigh the fall in consumer expenditure from the tourist tax to bring about a combined increase in consumer expenditure.
- **[Stand + Situation]** The combined effect of the implementation of a tourist tax and rise in incomes will lead to a fall in consumer expenditure for capsules hotels which are perceived to be inferior goods.
- **[Stand]** The combined effect of both events on normal necessities like business hotels will be indeterminate and may depend on the location of these business hotels relative to the heritage sites and islands which the tourists are visiting.
- **[Situation]** For business hotels located near the heritage sites where the XED value is high, the more than proportionate fall in demand would likely outweigh the effect of rising incomes to bring about a combined fall. The reverse might be true for such hotels which are located further away from the heritage sites.
- **[Assumption]** Our above analysis uses elasticity concepts which assume *ceteris paribus* – holding all other factors constant. However, this assumption may not hold in reality. Taste and preferences also play a role in influencing the market for hotel accommodation in Japan. Gen Z travelers who consider them refreshing and fun and this can lead to an increase in demand and hence consumer expenditure for such hotels even when incomes increase.
- YED values may also differ. Foreign tourists from developing countries might consider business hotels as luxurious and capsule hotels as (normal) necessity because of their differences in incomes.
- **[Magnitude/Situation]** In reality, the relationship between the price of visits to tourist attractions and the demand for hotel accommodation are likely to be weak especially for foreign tourists as the additional cost due to tourist tax is minimal in influencing consumers' decision to stay in hotels. Therefore, there is minimal impact on consumer expenditure on hotel accommodation. Consumers are likely to experience **sunk cost fallacy** when traveling; they might continue their course of action (staying in hotels) despite the implementation of tourist tax because consumers have already invested significant time and money for the trip.

Part (b) Mark scheme

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that has: <ul style="list-style-type: none"> <li>• <b>Good scope and balance</b> – assess the impact of the implementation of tourist tax and rise in incomes from different perspectives (based on the different values of XED and YED)</li> <li>• <b>Good rigour</b> – in depth analysis on how the relevant elasticities concepts can be applied to explain the impact on consumer expenditure.</li> <li>• <b>Good application to context</b> – good use of real-world examples/preamble to justify the nature of the product and its relationship with the tourist attractions in Japan.</li> </ul>	8 – 10
L2	For an underdeveloped answer that: <ul style="list-style-type: none"> <li>• <b>lacks scope and balance</b> – assesses the impact of the implementation of tourist tax and rise in incomes from different perspectives (based on the different values of XED and/or YED)</li> <li>• <b>lacks rigour</b> – gives a descriptive explanation of the impact on consumer expenditure</li> <li>• <b>lacks application to context</b> – explains with some reference to the hotel accommodation in Japan</li> </ul>	5 – 7
L1	For an answer that is largely descriptive, shows little or no application of economics, and contains conceptual errors. Answer has no/minimal reference to the market for hotel accommodation in Japan.	1 – 4
Level	Evaluation Synthesis	Marks
E3	For a well-substantiated evaluation that uses economic analysis to arrive at a <b>well-reasoned</b> judgement on the combined effects of the implementation of a tourist tax and a rise in incomes on consumer expenditure of different types of hotel accommodations.	5
E2	For an answer that makes some attempt at a judgement about the combined effects of the implementation of a tourist tax and a rise in incomes on consumer expenditure of different types of hotel accommodations. However, there may be some logical flaws in the judgement and/or inaccuracies in the synthesising process.	3 – 4
E1	For a largely unexplained judgment that addresses the question of the combined effects.	1 – 2

**Question 2**

National defence has been used as an example of public good while research and development (R&D) is an example of a production activity that generates positive externalities. To promote R&D, the government is considering the enforcement of patents. However, there are concerns that this could prevent potential competitors from entering the industry.

- (a) Explain why national defence and R&D, if left to market forces, might be allocated inefficiently. [10]
- (b) Discuss the factors that a government should consider when deciding to enforce patents to achieve a more efficient allocation of resources in the market for R&D. [15]

**Part (a) Question Interpretation**

<b>Command word/phrase</b>	<b>Explain why</b>	<b>Provide details and elaborate on the reasons for allocative inefficiency is observed in these markets.</b>
<b>Content</b>	National defence and R&D, if left to market forces, might be allocated inefficiently	Explain sources of market failure for national defence and R&D – public goods and positive externalities respectively.
<b>Context</b>	National defence and R&D	To apply analysis to the context.

*This question requires an explanation of how public goods and positive externalities, with application to context of national defence and R&D respectively, can lead to market failure.*

**Introduction**

- there is market failure and hence allocative inefficiency in the provision of national defence in a country as it can be considered as a public good and R&D due to positive externalities.

**Key Argument 1: Explain why there is allocative inefficiency in the market for national defence, a public good**

- **Governments intervene in the provision of key facilities such as defence as it is a public good, which is non-excludable and non-rivalrous.**
- National defence is non-excludable because it is impossible or prohibitively expensive to exclude non-payers from consuming the good once it has been provided.
- **[Contextualise non-excludability to the context]** It is not possible to exclude tourists from being protected against foreign threats and they would receive the same level of security as a citizen although tourists do not contribute to tax revenue that supports the defence measures.
- Non-rivalry means that consumption of the good by an additional individual will not reduce the quantity and/or quality available to others.
- **[Contextualise non-rivalry to the context]** The level of security provided by a robust national defence system is the same for everyone in the nation and does not diminish with an additional person in the country.

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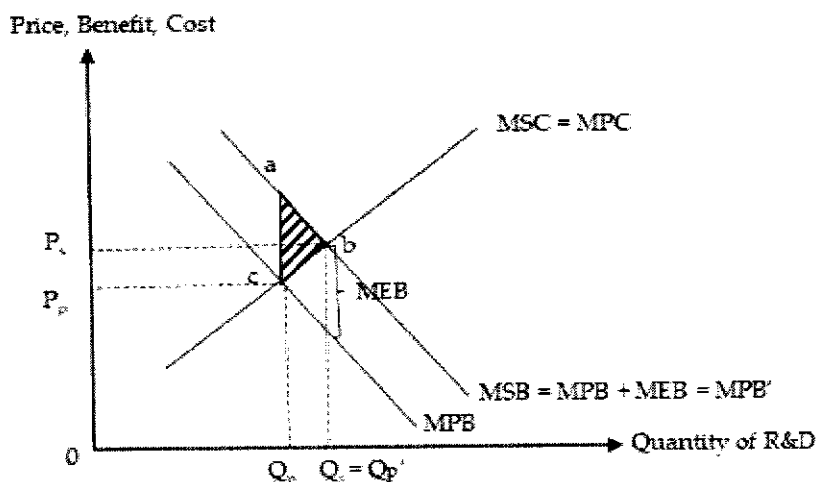
- **[Explain the implications of non-excludability]** Due to the non-excludability of defence, there is a free-rider problem where people have no incentive to pay for defence.
- Since anyone can enjoy the benefits of a defence without paying for it, they will not be willing to reveal their ability and willingness to pay. There is a lack of effective demand which results in an absence of a price signal.
- **[Explain implications of non-rivalry]** As national defence is non-rivalrous, the marginal cost of providing the protection to additional users is zero. Since the condition for allocative efficiency is  $P = MC$ , this means that the price charged for defence should be zero. All users who require defence should be given access regardless of payment.
- At a price of zero however, profit-maximising firms would not want to produce defence services.
- Because of non-excludability and non-rivalry of defence, no resources will be allocated to the production of defence in the free market as it would not be profitable
- There is total (complete) market failure and a missing market for defence. Hence, governments may intervene in the provision of defence to provide it at the socially optimal level,  $Q_s$ , to maximise society's welfare and achieve the microeconomic objective of allocative efficiency.

**Key Argument 2: Explain why there is allocative inefficiency in the market for R&D (due to positive externalities)**

- **R&D is a production activity that generates positive externalities.**
- **[Private costs and benefits]** In the production of research & development (R&D), producers consider their private benefits such as the potential revenue from the sale of newer and better products due to the research generated by the firms. On the other hand, firms also consider their private costs such as payments made for research materials and the wages to researchers.
- **[External benefits & Third parties]** However, they would ignore the external benefits to **third parties**, such as findings that may be useful for other firms to spark new R&D projects which could translate into higher profits for them.
- **[Divergence between perceived MPB and MSB]** The presence of marginal external benefit (MEB) creates a divergence between the marginal social benefit (MSB) and marginal private benefit (MPB), where  $MSB > MPB$ . Diagrammatically, the MSB curve lies above the MPB curve by the amount of the MEB as shown in Figure 1. Assuming that there are no negative externalities, the marginal private cost (MPC) = marginal social cost (MSC).
- **[ $Q_p$  vs  $Q_s$ ]** If left to the free market, the producers produce  $Q_p$  units of R&D, where  $MPB = MPC$  as they only consider their own private costs and benefits. However, the social optimal level of production is  $Q_s$  units, where  $MSB = MSC$ . As  $Q_p < Q_s$ , there is an underproduction of R&D.
- **[Deadweight loss]** At  $Q_p$ ,  $MSB > MSC$ . The additional unit of R&D produced adds more to society's benefits than to society's costs. From  $Q_p$  to  $Q_s$  units, the total social benefits (area  $Q_pabQ_s$ ) exceed the total social costs (area  $Q_pcbQ_s$ ). The shaded area abc represents the deadweight loss which is the welfare loss to society when R&D is not produced at the social optimal level. There is market failure as the private optimal quantity is allocative inefficient and social welfare is not maximised.

**Figure 1: Positive externalities arising from R&D production**

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**Conclusion**

- Resources are allocated inefficiently in the market for national defence as it is a public good that has complete market failure and in the market for R&D production as there exists positive externalities.

**Part (a) Mark scheme**

Level	Knowledge, Comprehension, Analysis and Application	Marks
L3	A well-developed answer that has: <ul style="list-style-type: none"> <li><b>Good scope</b> – explains how allocative inefficiency occurs due to public goods, positive externalities; and</li> <li><b>Good rigour</b> – explains how allocative inefficiency may arise using economic analysis and concepts (MSC/MSB analysis, non-excludability, non-rivalry); and</li> <li><b>Good application to context</b> – explains with reference to the market for defence and R&amp;D.</li> </ul>	8 – 10
L2	An underdeveloped answer that: <ul style="list-style-type: none"> <li>Lacks scope – explains only how allocative inefficiency is caused by public goods or positive externalities; and/or</li> <li>Lacks rigour – provides a descriptive explanation of how allocative inefficiency may arise; and/or</li> <li>Lacks application to context – answer lacks reference to the market for defence and R&amp;D.</li> </ul>	5 – 7
L1	For an answer that: <ul style="list-style-type: none"> <li>is descriptive and mainly states how allocative inefficiency arises, lacking in application of economic theory, and/or</li> <li>contains serious and pervasive conceptual errors, and/or</li> <li>is largely irrelevant.</li> </ul>	1 – 4

- (b) **Discuss the factors that a government should consider when deciding to enforce patents to achieve a more efficient allocation of resources in the market for R&D.** [15]

Part (b) Question Interpretation

<b>Command word/phrase</b>	Discuss the factors ... a government should consider	The decision-making framework is to be used. Consider (1) benefits, (2a) unintended consequence/cost & (2b) constraint/limitation
<b>Content</b>	when deciding to enforce patents	Enforcement of patents as a policy tool for government
<b>Context</b>	Market for R&D	To apply analysis to the context.

*A relevant response could include a brief explanation of how enforcement of patents, a policy tool for the market for R&D, will bring about benefit. This should be followed by a discussion of the unintended consequence/cost and constraint/limitation that a government should consider when choosing to enforcement of patents as policy tool using the decision-making framework. The evaluation then requires making a judgement on which of the factors discussed could be the most significant in a government's consideration and provide a sound justification of the stand made.*

**Introduction**

- As seen in (a), there is allocative inefficiency in the market for R&D. The government could consider the enforcement of patents to manage the above issue.
- This essay will discuss the benefit, constraint/limitation and unintended consequence/cost of this policy.

**Body:**

**Factor 1: Benefit of using legislation to achieve allocative efficiency (How it works)**

- **One factor that a government should consider is the benefit that enforcement of patents can bring about.**
- Legislation, in the form of enforcement of patents, could also be put in place to enhance the private benefits of R&D. A patent is an exclusive right to produce, sell, use or import an innovative product or process. Patents are granted to encourage technological innovation and to reward creative efforts. Many firms are not incentivized to engage in innovation through R&D for fears of exploitation or imitation by competing firms.
- Patent laws enforced by the government would therefore give firms greater private benefits that they can potentially receive from their innovation which can be depicted as an upward shift of the MPB curve from MPB to MPB' in Figure 1. At the same time, the MEB is eliminated as other firms cannot benefit from the R&D efforts by the firm. Hence, MPB' = MSB.
- The new private optimal quantity where MPB'=MPC, is at  $Q_p'$  which coincides with  $Q_s$  where MSB=MSC. Allocative efficiency is achieved and social welfare is maximised.

**Factor 2a: Unintended consequence/cost in using legislation**

- **A government should also consider the possible unintended consequence/cost of enforcement of patents.**
- Patents are considered as legal barriers to entry. When a patent is granted to a firm, the government gives exclusive production rights to the firm for a period of time. Due to the very

high barriers to entry, new firms are prevented or deterred from entering the industry. The degree of competition in the market is reduced.

- Market power of incumbent firms increases as market share increases and there are fewer substitutes available in the market for their products. With a higher and less price elastic demand, incumbent firms will therefore charge higher prices and produce collectively lower output as a whole.
- As a result of the decrease in output, the market output will be further away from the socially optimal output (where  $P=MC$ ), therefore increasing allocative inefficiency and market failure due to market dominance.

**Factor 2b: Constraint/Limitation in using legislation**

- **A government should also consider the possible constraint/limitation of enforcement of patents.**
- **Information gap:** To design effective laws, governments need to understand the given market. However, governments may have **imperfect information** of the markets as it could be difficult to gather the necessary information. In the case of patent protection, if regulations are too tight (e.g. complicated patent application process) it discourages companies to innovate, consumers may not have access to better quality and/or a wider variety of goods and services. Or if the patent term is overly long, firms protected by the patents may exploit consumers in the form of higher prices, leading to loss of consumer welfare.

**OR**

- **High administrative costs → unsustainability:** There are high administrative costs incurred in legislation, and difficulty in enforcement and ensuring compliance. High costs are incurred in sending government officials to households and firms to check and monitor that laws are being followed. Such high administrative cost could cause the enforcement of patents to be unsustainable and ineffective in the long term.

**Evaluative Conclusion (a reasoned stand that follows from the above analysis with 2 ATMS angle would suffice)**

- **[Stand]** Amongst the different factors, the cost/unintended consequence of creating an artificial barrier to entry is the most important consideration of the government.
- **[Magnitude]** Enforcements of patents on R&D, on one hand, encourages firms to undertake investment in this area which can benefit other industry players, raises productive and dynamic efficiency, encourages innovation and even leads to potential growth. However, such legislation creates strong barriers to entry when may worsen allocative efficiency in the society.
- **[Situation/Alternative]** Depending on the economic priorities of the government, for example to develop specific strategic areas and achieve potential growth, it may choose to use enforcement of patents to attract R&D in these specific strategic areas to achieve its aim. To give firms, in these strategic areas a greater push to embark on R&D, other than legislation, the government can consider the use of subsidies/grants for these firms.



## 2024 TJC JC2 H2 Prelim Suggested Answer with Comments

Part (b) Mark scheme

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that has: <ul style="list-style-type: none"> <li>• <b>Good scope</b> – explains at least two main possible factors (1) benefits, (2a) unintended consequence/cost &amp; (2b) constraint/limitation) that the government should consider when deciding to enforce patents.</li> <li>• <b>Good rigour &amp; application to context</b> – develops explanation according to context of R&amp;D in case material where possible.</li> </ul>	8-10
L2	For an undeveloped answer that: <ul style="list-style-type: none"> <li>• <b>lacks scope and balance</b> – explains only one main possible factor that the government should consider when deciding to enforce patents</li> <li>• <b>lacks rigour &amp; application to context</b> – gives a descriptive explanation with some reference to context.</li> </ul>	5-7
L1	For an answer that is largely descriptive, shows little or no application of economics, and contains conceptual errors. Answer has no/minimal reference to the market for R&D.	1-4
<b>Evaluation</b>		
E3	For a well-substantiated evaluation that uses economic analysis to arrive at a well-reasoned judgement on the relative significance of the factors in achieving a more efficient allocation of resources	5
E2	For an answer that makes some attempt at a judgement on the relative significance of the factors in achieving a more efficient allocation of resources	3-4
E1	For a largely unexplained judgement that addresses the question.	1-2

**Question 3**

The electricity industry in Singapore used to be a monopoly until 1998, where the government intervened in the industry. The industry has since faced several challenges, with an increase in prices of oil and gas in 2021 leading to several electricity retailers ceasing operations

- (a) Explain how the rising costs of oil and gas would affect electricity retailers and how it would influence their decision to cease operations. [10]
- (b) Discuss whether government intervention in Singapore's electricity market would necessarily improve consumer outcomes. [15]

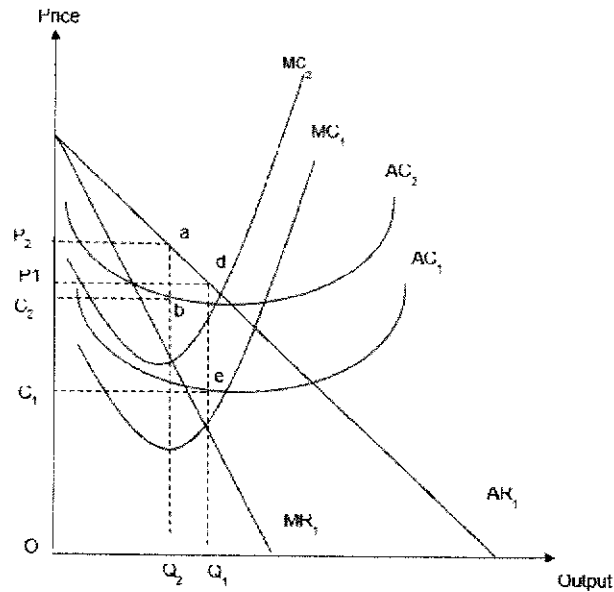
Part (a) Question interpretation

Command word/phrase	Explain	Account for, using economic theory and relevant examples where appropriate
Content	Rising costs of oil and gas... electricity retailers  <i>Decision to cease operations</i>	Rising costs which should lead to an increase in AC and MC  Cease operations – to consider both short-run and long-run shut down conditions
Context	<i>Electricity</i>	To consider the context of electricity.

*Students are expected to first explain how rising costs of oil and gas would impact the profits of electricity retailers. They should then bring in the shut down condition to explain how the rise in costs would influence their decision to shut down.*

**Introduction**

- Rising cost of oil and gas are factor inputs in the production of electricity. An increase in their prices would thus increase the cost of production of electricity, increasing the AC and MC of electricity retailers. This will lead to implications on the firms' decision to cease operations by shutting down.
- **KA1: The rising cost of oil and gas would increase the MC and AC of electricity retailers, reducing their profits.**
- Since oil and gas are factor inputs required to produce electricity, their rise in price would lead to a rise in the marginal cost of productions of electricity retailers. Thus, both MC and AC will increase.
- This is shown by an upward shift of AC and MC curves from AC1 and MC1 to AC2 and MC2 respectively.
- Assuming the demand, AR and MR remains constant, the profit maximising level of output where  $MR = MC$  decreases from Q1 to Q2 and price it charges will increase from P1 to P2. The level of supernormal profits decreases from P1dec1 to P2abc2.

**Figure: Impact of rising costs on profits**

- **KA2: Given the rise in MC and AC, retailers will have to use the shut-down condition to determine if they should cease operations.**
- In the short run, if  $AR \geq AC$ , retailers are making either normal or supernormal profits. Hence, they should continue in operation.
- However, if retailers are making subnormal profits, i.e.  $AR < AC$ , they will then need to take into account their average revenue and average variable cost (such as wages they pay) in deciding whether to shut down in the short run. If retailers shut down, it will definitely incur a subnormal profit equal to its fixed cost such as rental fees.
- If  $AR < AVC$ , retailers are unable to cover its variable costs and will be incurring even greater subnormal profits on top of the fixed costs by remaining in operation. Hence, they should shut down to minimise losses.
- If  $AR > AVC$ , the average revenue above average variable cost can go toward covering part or all of the firm's fixed costs, allowing it to make a smaller subnormal profit as compared to shutting down. Hence it should remain in operation to minimise losses.
- In the long run, all costs are variable as retailers will be able to make decisions regarding its use of all factors of production including rental costs.
- Hence, in the long run, if  $AR \geq AC$ , retailers should continue operations as it will be making a normal to supernormal profit.
- If  $AR < AC$ , retailers will be making subnormal profits in the long run and should therefore shut down and exit the industry.

## 2024 TJC JC2 H2 Prelim Suggested Answer with Comments

Part (a) Mark Scheme

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that has: <ul style="list-style-type: none"> <li>• Good scope – explains both the impact of rising costs of oil and gas as well as how it would influence the decision to cease operation</li> <li>• Good rigour – Answer use relevant firms and decisions analysis to explain the impact on profits and how a firm will consider revenue and costs when deciding on whether to shut down.</li> </ul>	8 - 10
L2	For an underdeveloped answer that: <ul style="list-style-type: none"> <li>• Lacks scope – Answer considers only the impact of rising costs of oil and gas OR how it would influence the decision to cease operation</li> <li>• Lacks rigour – Provides a descriptive explanation that lacks rigour and economic analysis.</li> </ul>	5 - 7
L1	For an answer that <ul style="list-style-type: none"> <li>• is descriptive, lacking in application of economic theory, and/or</li> <li>• contains serious and pervasive conceptual errors, and/or</li> <li>• is largely irrelevant.</li> </ul>	1 - 4

- (b) Discuss whether government intervention in Singapore's electricity market would necessarily improve consumer outcomes. [15]

## Part (b) Question interpretation

<b>Command word/phrase</b>	<i>Discuss</i>	Explain the workings and limitations/unintended consequences of several measures that the Singapore government can use and come to a well-reasoned judgement about their effectiveness or appropriateness in improving consumer outcomes
<b>Content</b>	Government intervention Consumer outcomes	Possible policies include MC pricing and deregulation. Consumers are concerned about price, consumer surplus and variety of goods and services
<b>Context</b>	<i>Electricity</i>	Consider the context of electricity.

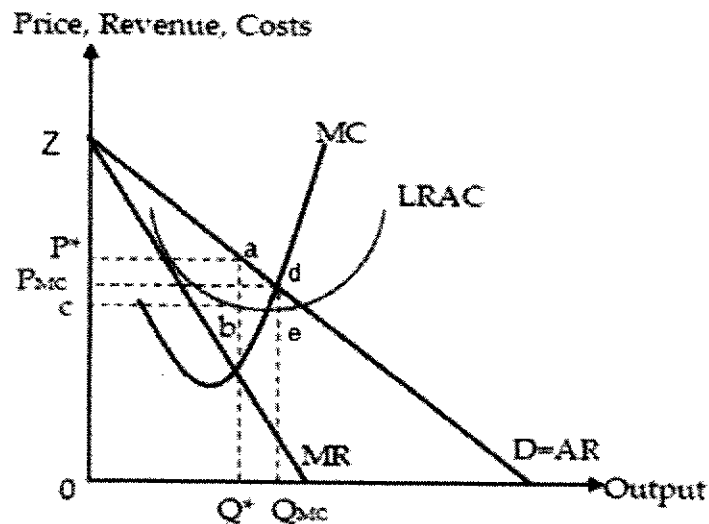
*A relevant answer requires a balanced analysis (both the workings and limitations, unintended consequences) of the various policies (e.g. MC pricing, deregulation) that the Singapore government can implement to improve consumer outcomes in the electricity market. There should also be comparison between these policies to craft a well-reasoned judgement of the appropriateness/effectiveness of the various policies to determine which is more desirable in the context of Singapore.*

### Introduction

- From the preamble, the electricity industry was originally a monopoly before the government intervened to improve consumer outcomes, which could be an improvement in the consumer surplus. Consumer surplus is the difference between the maximum price that consumers are willing and able to pay for a given quantity and the market price.
- To improve consumer outcomes the Singapore government can deregulate the market to increase contestability or implement MC pricing.
- However, these policies have their limitations and unintended consequences as well.

### Policy 1 (How it works): Price regulation (e.g. MC pricing or AC pricing)

- The government can force a monopoly to charge a price equal to its marginal cost ( $P=MC$ ).
- MC pricing will ensure that the price that consumers pay will be equal to the MC that firms incur to produce the good.



**Figure 2: MC pricing implemented on a monopoly**

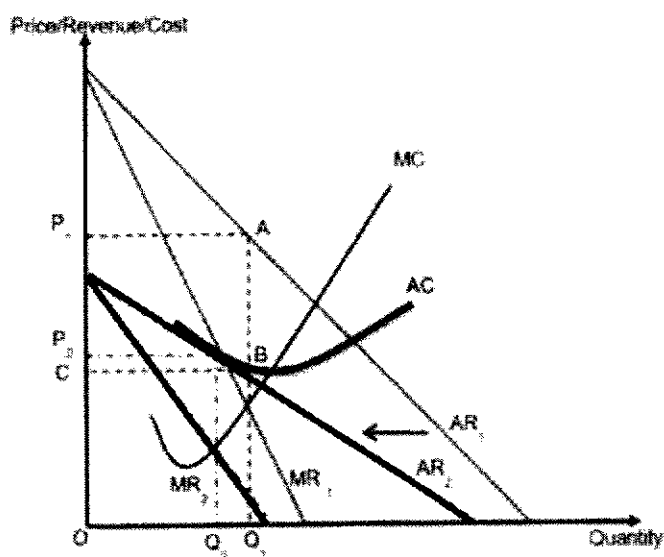
- In Figure 2, with government regulation of MC pricing, the monopoly is forced to set a lower price  $P_{MC}$ , where  $MC$  meets  $D = AR$ .) and output has been raised to  $Q_{MC}$ . The fall in price and rise in output will lead to improvement in consumer surplus, from area  $Zap^*$  to area  $Zdp_{mc}$ .
- MC pricing will ensure that the price that consumers pay will be equal to the MC that firms incur to produce the good, and maximise society's welfare

### Limitations:

- To innovate, a firm must have both the willingness and ability to do so. The willingness would depend on the expectation of higher profits while the ability would depend on accumulated profits of the firm. Price controls will lead to a fall in profits for the firm. From the above diagram, the firm will see a fall in supernormal profits from  $P^*abc$  to smaller supernormal profits of  $P_{mc}dec$ . Hence, the willingness and ability for firms to innovate in the long run falls, reducing dynamic efficiency. Price controls reduces both the willingness and ability of a firm to innovate as the firm has reduced profits, which will limit the variety of products available for consumers.

**Policy 2 (How it works):**

- **Deregulation, the removal of official barriers to competition, can be adopted by the Singapore government.**
- By removing government licenses that restrict entry of new firms, 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 AR<sub>1</sub> and MR<sub>1</sub> to AR<sub>2</sub> and MR<sub>2</sub> respectively and become gentler.
  - At the new profit-maximising output level where MC=MR, the price charged by will fall from P<sub>1</sub> to P<sub>2</sub>. Consumers will thus benefit from the lower prices.
  - Consumers will also benefit increased variety due to the different offerings from the electricity retailers. For example, Geneco allows for consumers to purchase green add-on to the electricity plan, which aids in removing carbon dioxide emissions to the environment.

**Policy 2 (Limitations/unintended consequences):**

- **However, deregulation may lead to wasteful duplication of resources which may lead to higher prices for the consumers**
- In the case of a possible natural monopoly such as the electricity market where there may be high set-up costs (such as the construction of power grid for transmission of electricity), one firm would be sufficient to supply for the entire market's demand.
- Having two or more firms in the markets 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.

**Evaluative Conclusion:**

- **[Stand]** Government intervention in the electricity market has improved consumers outcomes.
- **[Situation]** Government intervention has taken the form of deregulation, where more retailers joined the market. This has allowed for greater price competition among the firms, which has seen a fall in price of electricity. In addition, natural monopoly argument does not hold as the national power grid are owned and operated by the SP group, hence addressing the issue of

## 2024 TJC JC2 H2 Prelim Suggested Answer with Comments

high set-up costs for the retailers. The diverse offerings from the different retailers also indicate that the variety available for consumers have actually increased.

## Part (b) Mark Scheme

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that has: <ul style="list-style-type: none"> <li>• <b>Good scope</b> – explains at least two possible government intervention and how they can improve consumer outcomes as well as their limitations.</li> <li>• <b>Good rigour &amp; application to context</b> – uses firm analysis and shows good contextualisation to the market for electricity</li> </ul>	8-10
L2	For an undeveloped answer that: <ul style="list-style-type: none"> <li>• <b>lacks scope and balance</b> – explain only one government intervention and its limitations OR explain two government intervention workings or limitations only</li> <li>• <b>lacks rigour &amp; application to context</b> – gives a descriptive explanation with some reference to context.</li> </ul>	5-7
L1	For an answer that is largely descriptive, shows little or no application of economics, and contains conceptual errors.	1-4
<b>Evaluation</b>		
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

- 4 As part of its efforts to tackle climate change, Singapore will be spending US\$20 million to construct the world's largest facility to boost the ocean's ability to absorb carbon dioxide (CO<sub>2</sub>) from the atmosphere. Meanwhile, the US spent US\$3 billion to install zero emissions equipment and technology to reduce air pollution at ports.**
- (a) Explain how an increase in government expenditure can lead to a bigger change in national income and how such spending may have different impacts on aggregate demand for two different countries. [10]**
- (b) Assess whether an increase in government expenditure is likely to be the best policy to attain inclusive and sustainable growth in Singapore. [15]**

Part (a) Question interpretation

<b>Command word/phrase</b>	<i>Explain how</i>	Make clear the process using economic reasoning.
<b>Content</b>	<p><i>Increase in government expenditure...</i></p> <p><i>bigger change in national income</i></p> <p><i>Different impacts on aggregate demand...two countries</i></p>	<p>The cause is an increase in government expenditure.</p> <p>The bigger change is due to the multiplier effect, which needs to be rigorously analysed.</p> <p>For the different impacts on AD, factors affecting the multiplier size would be the focus.</p>
<b>Context</b>	<i>Two different countries</i>	No specified context, but students should use relevant examples. Given that the focus is on the different impacts of a stimulus on AD to explain the differences in multiplier size, the choice of countries would depend on their varying MPC and MPW values.

*This question requires a rigorous explanation of (i) how national income of a country could be affected by an increase in government multiplier via the multiplier effect and (ii) how the impact on AD could differ in terms of factors affecting the multiplier size for two different countries with different MPC/MPW values.*

**Introduction**

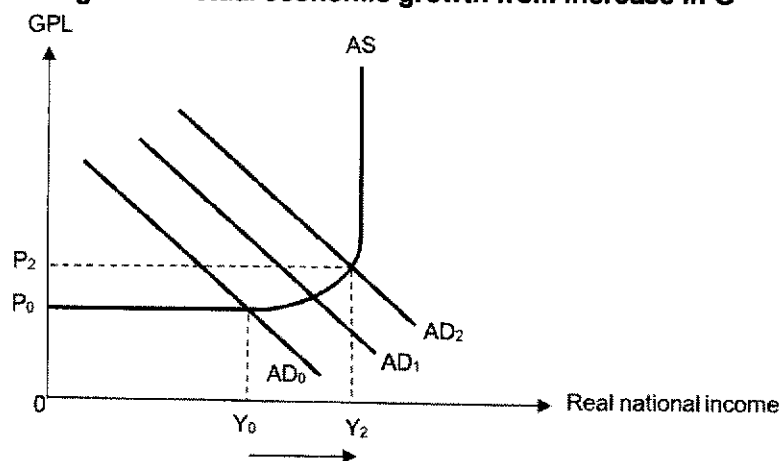
- **[Define key term(s)]** Aggregate demand (AD) is the total demand of an economy's domestically produced final goods and services at a given general price level in a given time period.
- **[Outline approach]** A increase in government expenditure (G) would lead to a bigger increase in national income because of the multiplier effect. Differences in the factors affecting the multiplier size between countries will account for differences in the impact on AD when G rises.



**Key argument 1: Explain how an increase in G would lead to a bigger increase in national income.**

- **An increase in government expenditure (G), for instance, to construct a facility to absorb CO<sub>2</sub> from the atmosphere, can lead to a bigger change in national income via the multiplier effect.**
- Assuming an increase in G by \$10 billion, which is a direct injection into the economy, national income will increase by \$10 billion.
  - As G is a component of AD, the increase in G will increase AD directly from AD<sub>1</sub> to AD<sub>2</sub>. Assuming spare capacity, this will trigger the multiplier effect.
- When the engineers and construction workers involved in the construction project receive additional incomes for their labour services, they will spend a proportion on more goods and services like food and clothing, depending on their marginal propensity to consume (MPC).
  - Assuming a MPC of 0.5, out of the increase in national income of \$10 billion, \$5 billion will be spent on consumption expenditure (C), and the rest (\$5 billion) will be withdrawn in the form of savings, taxes and import expenditure. This forms the first round of the multiplier process.
  - As one's spending becomes another's income, the increase in C by \$5 billion will generate additional incomes for the food and clothing retailers, inducing consumption by \$2.5 billion (0.5 x \$5 billion), while the remaining \$2.5 billion are withdrawn. In the second round, induced consumption increases by \$2.5 billion, and \$7.5 million is withdrawn.
    - The increase in spending depletes firms' inventories. When firms face an unplanned fall in inventories, they are likely to hire more labour to increase production, further increasing national income. Therefore, each round of increase in income generates another increase in income-induced consumption, which increases AD further.
    - The multiplier effect stops when the total increase in withdrawals from savings, taxes and imports is equal to the initial increase in G of \$1 billion, hence achieving equilibrium.
  - Diagrammatically, the increase in AD from AD<sub>1</sub> to AD<sub>2</sub> occurs because of the initial injection of increased G, and eventually to AD<sub>3</sub> because of the multiplier effect.
    - The result is an increase in real national income from Y<sub>1</sub> to Y<sub>3</sub> by a total of \$20 billion that is twice the initial increase in G given that  $k = 1/1-MPC$  (or  $1/MPW$ ).

**Figure 1: Actual economic growth from increase in G**



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*Notes:*

- Since the question did not specify the model to be used, either the circular flow of income model OR the AD/AS model may be used to provide diagrammatic rigour. For revision, students can refer to their tutorial suggested answer to EQ 1 under the Topic Circular Flow of Income and AD/AS model for both versions of the answer.
- A numerical example is not necessary to obtain full credit.

**Key argument 2: Explain how an increase in G would have different impacts on AD for two different countries because of differences in MPC and MPW.**

- An increase in G of the same amount would have different impacts on AD because of the different multiplier size between countries.
- The multiplier size,  $k$ , is calculated as:  $k = 1 / MPW = 1 / (MPS + MPT + MPM)$ , where MPW is the marginal propensity to withdraw (MPW), which is made up of the marginal propensity to save (MPS), marginal propensity to tax (MPT) and marginal propensity to import (MPM).
- A country like Singapore will experience a smaller impact on AD because of its higher MPW and hence small multiplier value. This is because of its openness to trade and greater savings culture, resulting in a large MPM and MPS respectively.
  - As Singapore is a small country and lacks many resources, it relies heavily on imported raw materials and food for survival, making it one of the countries that has a high MPM. At the same time, with the Central Provident Fund (CPF) – a compulsory national saving scheme, Singapore has one of the highest savings rates in the world. This gives rise to a high MPS value. Together, the high MPM and MPS will give rise to a high MPW for Singapore, and hence a small  $k$  value. This means that for every additional dollar of income earned, a larger proportion of the income is saved and spent on imports, leaving a smaller proportion that is further injected into its economy.
- In contrast, big and less open countries like the US tend to have a large  $k$  and hence large MPC. This is because of its culture of consumerism which gives rise to a high MPC and its abundance of natural resources which reduces its dependence on imported raw materials leading to a lower MPM.
  - For every additional income earned, a larger proportion is spent on goods and services, leading to larger successive rounds of income-induced consumption and into the economy. With a larger  $k$ , the impact on AD from an equivalent increase in G would be larger.

**Part (a) Mark scheme**

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that has: <ul style="list-style-type: none"> <li>• <b>Good scope</b> – analyses the impact on national income due to the multiplier effect and factors affecting the size of multiplier.</li> <li>• <b>Good rigour</b> – uses relevant tools of economic analysis (either circular flow of income OR AD/AS) and real-world examples of two different countries.</li> </ul>	8 – 10
L2	For an underdeveloped answer that: <ul style="list-style-type: none"> <li>• Lacks scope – only explains the multiplier effect or multiplier size.</li> <li>• Lacks rigour – can be descriptive at times with gaps in analysis.</li> </ul>	5 – 7

L1	For a largely irrelevant response that contains serious and pervasive errors, with non-existent or minimal application of economic concepts or theories.	1 – 4
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**(b) Assess whether an increase in government expenditure is likely to be the best policy to attain inclusive and sustainable growth in Singapore. [15]**

Part (b) Question interpretation

<b>Command word/phrase</b>	<i>Assess whether</i>	To provide a balanced analysis of the workings and limitations (O-W-L framework) of an increase in government expenditure and one alternative policy in attaining inclusive and sustainable growth before evaluating which policy measure is more effective.
<b>Content</b>	<p><i>An increase in government expenditure...</i></p> <p><i>Likely to be the best policy</i></p> <p><i>Attain inclusive and sustainable growth</i></p>	<p>An increase in government expenditure is an example of expansionary fiscal policy.</p> <p>Comparison with an alternative policy is required.</p> <p>Both inclusive and sustainable growth requires sustained growth to first be achieved. In addition, inclusive growth takes income distribution into consideration and does not contribute to worsening income inequality. For sustainable growth, sustained growth must be attained without creating other significant economic problems (such as depleted resources and environmental problems), particularly for future generations.</p>
<b>Context</b>	<i>Singapore</i>	Real world-examples should be applied to Singapore's context.

*This question requires a rigorous explanation of both the workings and limitations of an increase in government expenditure (an e.g of expansionary fiscal policy) and an alternative policy in attaining inclusive and sustainable growth, before evaluating which policy is the best in the Singapore context.*

**Introduction**

- **[Define key terms]** Inclusive growth indicates a rate of growth that is sustained over a period of time, broad-based across economic sectors, and creates productive employment opportunities for the majority of the country's population. It takes income distribution into consideration and does not contribute to worsening income inequality. For sustainable growth to be attained, there must be a sustained rate of growth without creating other significant economic problems (such as depleted resources and environmental problems), particularly for future generations.

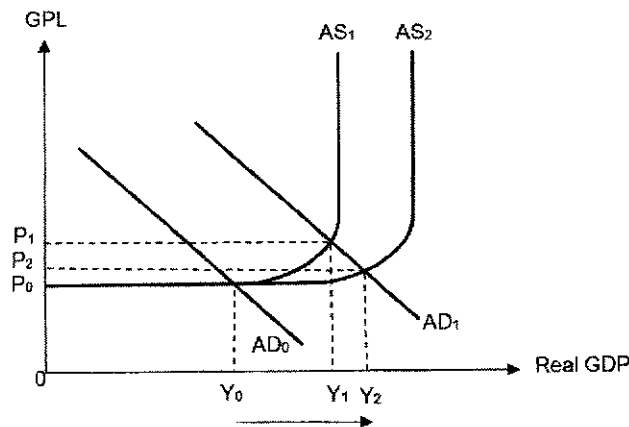
2024 TJC JC2 H2 Prelim Suggested Answer with Comments

- **[Outline approach]** Besides an increase in  $G$ , supply-side policies can be good policies to attain inclusive and sustainable growth in Singapore.

**Key argument 1: Explain how an increase in government expenditure can be a good policy to attain inclusive and sustainable growth, and its limitation/ unintended consequence.**

- An increase in government expenditure ( $G$ ), an example of expansionary fiscal policy, can lead to an increase in  $AD$  and a multiplied increase in national income through the multiplier effect to achieve **actual economic growth** (as explained earlier in part a), shown in Figure 2 from  $Y_0$  to  $Y_1$ .
- Development government expenditure like the examples given in the preamble can also have supply-side effects. The construction of “the world’s largest facility to... absorb CO<sub>2</sub>” and “spending on equipment and technology” are investments by governments on capital projects with the potential of increasing the quality of capital, increasing the economy’s productive capacity and hence shifting the  $AS$  curve rightwards from  $AS_1$  to  $AS_2$ .
  - This will increase the full employment output of the economy, allowing Singapore to experience **potential economic growth**. With both actual growth and potential growth from the increase in  $AD$  and  $AS$  in tandem, **sustained growth**, which is long run non-inflationary growth, is attained.

**Figure 2: Sustained economic growth from increase in  $G$**



- Moreover, spending on sustainable infrastructure reduces the amount of carbon dioxide that will be emitted. This reduces the amount of greenhouse gases and mitigates global warming. This helps Singapore to attain **sustainable growth** as the reduction in air pollution will ensure that the environment remains habitable for our future generations.
- It may be argued that an increase in  $G$  in the construction of sustainable infrastructure can help alleviate income inequality to attain **inclusive growth** as these projects increase the demand for labour in the construction sector, which is relatively lower-skilled and paid lower wages. As the demand for construction workers increases, this raises their wages, hence reducing the wage gap and income inequality between the lower-skilled and higher-skilled workers to bring about more inclusive growth.
- However, Singapore’s small multiplier size as explained in part (a), will be a limiting factor to the extent to which sustained growth, a prerequisite for both inclusive and sustainable growth can be attained.
  - A higher amount of government expenditure will be required for the initial injection for Singapore to experience the same extent of growth as a country like the US, which has a

larger multiplier. This will pose a large strain on the government budget and potentially cause the government to incur debt should it borrow to finance the spending.

**Key argument 2: Explain how supply-side policies involving the upskilling of lower-skilled labour and green technology can be an alternative policy to attain inclusive and sustainable growth, alongside its limitation / unintended consequence.**

- Besides an increase in G, supply-side policies such as the upskilling of lower-skilled labour and fostering innovation through the use of greener technology and R&D in energy and resource efficient technologies, can help attain inclusive and sustainable growth.
- The upskilling of workers made possible through the SkillsFuture Credit which grants all Singapore citizens 25 years and above a credit of \$500, can boost labour productivity, allowing more output to be produced per unit manhour, and increase the quality of labour.
  - (Optional) This former leads to an economy-wide reduction in the unit cost of production whereas the latter increases productive capacity. Both will increase AS. (Diagrammatically, the combined effect is a downward and rightward shift of the AS curve).
  - At the same time, a more skilled workforce will attract more foreign direct investment (FDI) into the economy. As I increases, this can lead to an increase in AD and actual economic growth.
  - With both AD and AS increasing in tandem, sustained growth is attained.
- The upskilling of lower-skilled workers increases their productivity and increase their wages. As their disposable incomes rise, they have higher purchasing power and greater ability to consume. The higher wages also narrow the income disparity between the high-skilled and low-skilled workers to achieve greater **inclusive growth**.
- Supply-side policies that foster innovation through the use of greener technology encourages firms to reduce the level of pollution and carbon footprint, reducing the extent of negative externalities and harm to the environment. R&D into energy and resource efficient technologies reduce the depletion of natural resources, allowing future generations to continue using these resources to drive their growth in the longer run, hence promoting the achievement of **sustainable economic growth**.
- However, there is high uncertainty surrounding the success of such supply-side policies, and long time lags.
  - The effectiveness of upskilling largely depends on the receptiveness of the workers undergoing the training. For lower-skilled older workers especially, a mindset shift may be required, and the steep learning curve may be a strong limiting factor to their willingness to acquire new knowledge and skills. This will limit the effectiveness of upskilling in attaining inclusive growth. OR
  - For a small economy like Singapore with land constraints, there are limitations to the types of alternative green energy sources that can be adopted to reduce carbon emissions. These will limit the extent to which sustainable growth can be attained.
- *Note: For KA 2, alternative policies like progressive income taxes, carbon taxes (taxing greenhouse gases), etc. are also accepted.*

## 2024 TJC JC2 H2 Prelim Suggested Answer with Comments

E2	For an answer that makes some attempt at whether an increase in government expenditure is the best policy to attain inclusive and sustainable growth.	3 – 4
E1	<ul style="list-style-type: none"> <li>• For a briefly explained evaluative statement that addresses the question; and/or a reasoned questioning of the key arguments.</li> <li>• There are however some logical flaws and inaccuracies in the analysis.</li> </ul>	1 – 2

- 5 Consumer prices in Singapore rose by 6.1 percent in 2022, the fastest rate of increase since 2008. This dramatic rise in inflation was driven by a range of factors – the global economic rebound, and global supply chain disruptions.**

**Source: Monetary Authority of Singapore, Jan 2023**

- (a) Explain how the global economic rebound and global supply chain disruptions might have consequences on Singapore's aggregate demand and aggregate supply. [10]
- (b) Assess whether the policies designed to achieve price stability would inevitably result in trade-offs for Singapore's economy. [15]

Part (a) Question Interpretation

Command word/phrase	Explain how	Make clear by detailing the process through which the cause-and-effect relationship occurs, and elaborate with economic reasoning.
Content	Global economic rebound.... Global supply chain disruptions Consequences on AD and AS	Income of trading partners rise → increase demand for SG's exports → increase (X-M) → <u>increase AD</u>  Increase in unit cost of production due to rise in price of raw materials / factor inputs → <u>fall in SRAS</u>
Context	Singapore	Context of Singapore's AD and AS

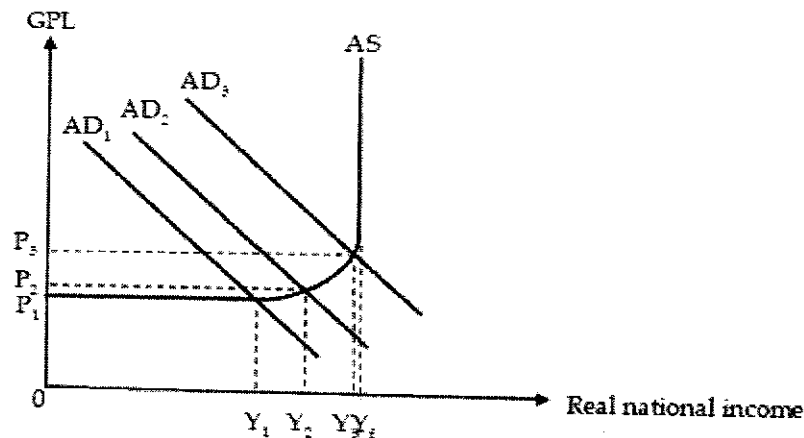
*Students are to first explain how global economic rebound affects the citizens of SG's trading partners and its impact on her Aggregate Demand. Next, students should explain how the global supply chain disruptions would result in a rise in price of raw materials and hence a fall in Aggregate Supply.*

**Introduction**

- Aggregate demand (AD) is the total demand of an economy's domestically produced final goods and services at a given general price level in a given time period.
- Aggregate supply (AS) refers to the total supply of an economy's domestically produced final goods and services at a given general price level in a given time period.
- This response will explain how the two events of global economic rebound and global supply chain disruptions will affect Singapore's economy's AD and AS.

**KA1: Explain how global economic rebound affects Singapore's AD**

- **Global economic rebound will increase Singapore's AD through an increase in her net export revenue (X-M), Consumption expenditure (C) and Investment Expenditure (I).**
  - During a period of economic rebound, especially during the post-pandemic period, real national income of Singapore's trading partners', like USA and China, is likely to have risen.
  - This translates to an increase in income for US and Chinese citizens, thus increasing their purchasing power.
  - Assuming Singapore's exports are seen as normal goods, when the income of US and Chinese citizen rises, the demand for Singapore's exports would have risen.
  - As the demand for Singapore's exports rise, the price and quantity of her exports would increase, increasing her export revenue. Assuming ceteris paribus, Singapore's (X-M) would have increased.
  - Furthermore, the global economic rebound would also mean that there is positive consumer and business outlook, incentivizing consumers to increase Consumption expenditure (C) due to expectations of higher future incomes, and also incentivizes firms to increase Investment expenditure (I) due to higher expected profits.
- As  $AD = C + I + G + (X-M)$ , an increase in C, I and (X-M) increases Singapore's Aggregate Demand.
  - From Figure 1 below, the increase in (X-M) is represented by a rightward shift in the AD curve from AD<sub>1</sub> to AD<sub>2</sub>. Assuming spare capacity, the increase in AD thus triggers a multiplier effect, where there is successive rounds of increase in income-induced consumption. AD thus increases further from AD<sub>2</sub> to AD<sub>3</sub> in Figure 1 below.

**Figure 1: Effect of an increase in AD because of global economic rebound****KA2: Explain how global supply chain disruption affects Singapore's AS**

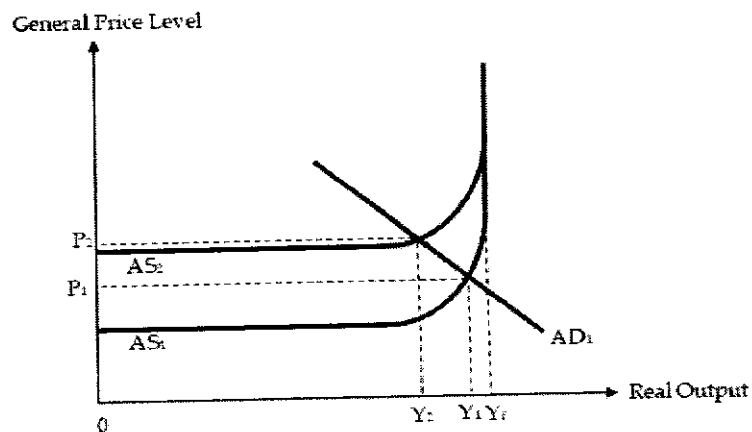
- **Global supply chain disruption will reduce Singapore's AS through an increase in the price of imported factors of production and unit cost of production.**
  - As Singapore has no natural resources, she depends on imported factors of production for almost all her production of goods and services.



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- The supply chain disruptions mean that there could be supply shocks in the market for raw materials like steel and copper, reducing its supply and increasing their prices.
- As price of raw materials like steel and copper rise, these represent an increase in imported factors of production for Singapore's economy.
- These will drive up unit cost of production, thus reducing Singapore's Aggregate Supply.
- From Figure 2 below, the fall in AS is represented by an upward shift in the AS curve from AS<sub>1</sub> to AS<sub>2</sub> below.

**Figure 2: Effect of an fall in AS because of global supply chain disruptions**



### Conclusion

- There will be a rise in AD due to global economic rebound and a fall in AS due to the global supply chain disruptions

### Part (a) Mark scheme

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that has: <ul style="list-style-type: none"> <li>• Good scope – explains how global economic rebound increased the (X-M) and AD, and how global supply chain disruption decreased AS</li> <li>• Good rigour – uses relevant AD and AS concepts to explain</li> <li>• Good application to context – provides appropriate examples in the context of Singapore.</li> </ul>	8 – 10
L2	For an underdeveloped answer that: <ul style="list-style-type: none"> <li>• Lacks scope – only explains the impact on AD but not AS or the other way round.</li> <li>• Lacks rigour – answer can be descriptive at times without consistent use of relevant AD / AS analysis.</li> <li>• Lacks application to context – answer lacking relevant examples to Singapore's context.</li> </ul>	5 – 7
L1	For an answer that:	1 – 4

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	<ul style="list-style-type: none"> <li>• Is descriptive, lacking in application of economic theory, and/or</li> <li>• Contains serious and pervasive conceptual errors, and/or</li> <li>• Is largely irrelevant</li> </ul>	
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**(b) Assess whether the policies designed to achieve price stability would inevitably result in trade-offs for Singapore's economy. [15]**

Part (b) Question Interpretation

<b>Command word/phrase</b>	<i>Assess whether</i>	Consider different perspectives regarding the policies designed to achieve price stability.. whether they will result in trade-offs
<b>Content</b>	<i>Policies designed to achieve price stability .....</i>  <i>Result in trade-offs</i>	<i>Appreciation (contractionary exchange rate monetary policy) can help to counter dd-pull and cost-push inflation</i>  <i>Supply-side policies to increase labour productivity can also help to counter dd-pull and cost-push inflation</i>  <i>Trade-offs → negative unintended consequences on the economy</i>
<b>Context</b>	<i>Singapore's economy</i>	Context of Singapore's economy

*A relevant response requires students to explain how two policies work to maintain price stability in Singapore (policies could ideally include contractionary exchange rate monetary policy and also long run supply-side policies). Students should follow through with the balance, which entails the negative unintended consequences of these policies on the economy. Students are required to come up with a reasoned conclusion on whether these policies will eventually result in trade-offs on the Singapore's economy.*

**Introduction**

- From part (a), the increase in AD and the fall in AS would have resulted in the sustained increase in general price level. This explains the 'dramatic rise in inflation' as reflected in the pre-amble experienced in 2022, the fastest rate of increase since 2008.
- This response will explain how the policies designed to achieve price stability in Singapore works, an appreciation of the SGD, together with supply-side measures to improve labour productivity, together with their potential negative unintended consequences.

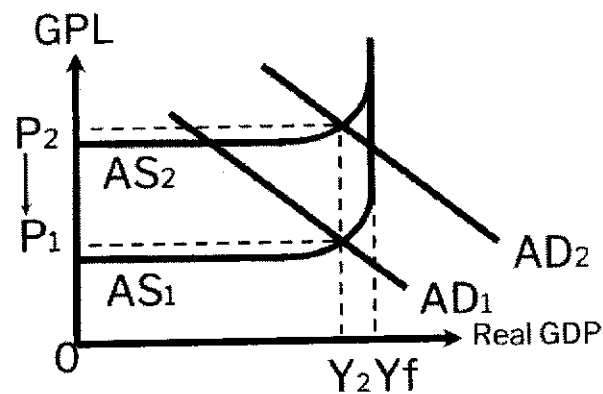
***Policy 1: appreciation of Singapore's currency can help to maintain price stability***

- ***In times of high inflation, the appreciation of Singapore's currency (SGD) could reduce the AD and increase the AS, thus reducing the GPL in the economy and maintain price stability.***

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- Initially, Singapore's economy may be experiencing both demand-pull and cost-push inflation, where the AD increased from AD<sub>1</sub> to AD<sub>2</sub> while AS decreased from AS<sub>1</sub> to AS<sub>2</sub>. Thus general price level would have increased from P<sub>1</sub> to P<sub>2</sub> as seen in Figure 3 below.
- When the SGD appreciates, price of exports in foreign currency increases and quantity demanded for exports falls. At the same time, price of imports in SGD decreases and the quantity demanded for imports increases.
- Assuming Marshall-Lerner condition [absolute sum of PED<sub>x</sub> + PED<sub>m</sub> > 1], (X-M) falls and AD falls.
- A decrease in (X-M) will also trigger the reverse multiplier effect, thus leading to a multiplied decrease in income-induced consumption, thus shifting the AD curve leftwards from AD<sub>2</sub> to AD<sub>1</sub> in Figure 3 below.
- At the same time, the price of imported raw materials falls. As mentioned in (a), since Singapore does not have many natural resources and would depend on imported factors of production, an appreciation leads to a fall in the unit cost of production and AS increases and shift downwards from AS<sub>2</sub> to AS<sub>1</sub>.
- Thus, the appreciation of the SGD would have resulted in the GPL decreasing from P<sub>2</sub> to P<sub>1</sub>, thus achieving price stability in Singapore.

**Figure 3: impact of appreciation on Singapore economy**

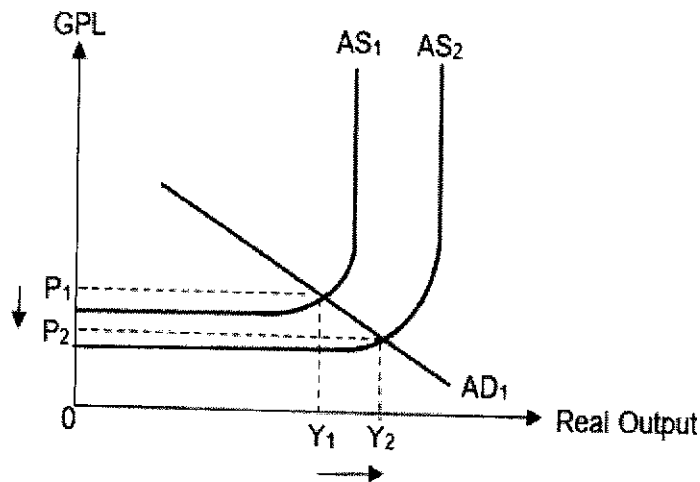


- **However, appreciation may potentially lead to the trade-off of negative growth and higher demand-deficient unemployment.**
  - If the magnitude of the AD falling outweighs the rise in AS as seen in the Figure above, the resultant impact on the real GDP would be that real GDP falls from Y<sub>f</sub> to Y<sub>2</sub>.
  - This reduction in real GDP means negative actual growth. This reduction in output also means that firms would face an increase in their inventory levels, thus reducing derived demand for labour.
  - Demand deficient unemployment thus rises to (Y<sub>f</sub> - Y<sub>2</sub>).
- Thus, this potentially incurs the trade-off of negative growth and higher demand deficient unemployment.

**Policy 2: supply-side policy of increasing labour productivity can help to maintain price stability**

- **During periods of high inflation, the supply-side policy of increasing labour productivity can increase both short run and long run AS, thus reducing GPL in the economy and maintain price stability.**
  - The Singapore government has set out a Smart Nation Plan, integrating advanced technologies like artificial intelligence, Internet of Things and data analytics into existing infrastructure and process.
  - The integration of these infrastructure would eventually lead to an increase in labour productivity in Singapore, and serves to improve the quality of labour.
  - When the quality of factors of production improves, there will be an increase in the productive capacity of the economy. AS increases and shifts rightwards.
  - At the same time, each unit of resource can now produce more output in the same period of time. Assuming constant costs, the unit cost of production decreases and AS shifts downwards.
  - As shown in figure 4 below, this supply side policy will lead to AS shifting rightwards and downwards from AS<sub>1</sub> to AS<sub>2</sub>. General price level thus decrease from P<sub>1</sub> to P<sub>2</sub>, combating both demand-pull and cost-push inflation in Singapore.

**Figure 4: impact of increase in labour productivity on Singapore's economy**



- **However, supply side policies to increase labour productivity may potentially lead to the trade-off of unemployment.**
  - Since the supply-side policy increases productive capacity, should this policy be very successful in achieving this outcome, the eventual outcome may eventually lead to a greater extent of spare capacity, thus increasing unemployment.
  - Moreover, supply-side policies like the digital transformation to increase labour productivity may potentially result in a rise in structural unemployment, as lesser units of labour are needed due to the digital transformation. Should the workers be laid off and not possess the skills to transit into the expanding industries due to occupational

- immobility and skills mismatch, there would be a rise in structural unemployment, thus leading to a trade-off.
- In addition, supply-side policies like these require usage of government's budget. This means that the government may have lesser funds to allocate to carry out expansionary fiscal policy to boost growth for example.
  - Thus, this potentially incurs the trade-off of unemployment and allocative inefficiency

### **Evaluative conclusion**

- **[Stand]** Whether the policies designed to achieve price stability will inevitably incur trade-offs on Singapore's economy ultimately depends on the government's ability to fund the policy and the choice of policy used.
- **[Situation]** For the supply-side policy, since Singapore has been prudent in her use and allocation of funds and have been recording balanced budget over the years, she is likely to have sufficient funds to fund long-term digital transformation and infrastructure. Thus, it is unlikely that there will be trade-offs for her economy as there is likely to be enough funds for expansionary policies to achieve other macroeconomic goals as well.
  - **[Alternatives + Situation]** From AS1 to AS2 below. Moreover, Singapore government has been spending on SkillsFuture to allow workers to upskill themselves to reduce occupational immobility when the economy restructures. Thus, the trade-off of structural unemployment is unlikely to be inevitable.
  - **[Assumptions]** Furthermore, supply-side policies that increase productivity tend to allow for the attainment of sustained growth, thus reducing the inevitability of trade-off for Singapore's economy.
- **[Magnitude]** For the currency appreciation, trade-off is likely to be inevitable. This is because, although currency appreciation leads to an increase in AS and a decrease in unit cost of production due to the high import content of Singapore's exports, this is likely to only mitigate the impact of the appreciation on the decrease in the net exports thus incurring the trade-off.

### Part (b) Mark scheme

<b>Level</b>	<b>Knowledge, Application/Understanding and Analysis</b>	<b>Marks</b>
L3	For a well-developed answer that has: <ul style="list-style-type: none"> <li>● <b>Good scope and balance</b> – explains how 2 policies (appreciation and supply-side policy) work to achieve price stability, together with their negative unintended consequence,</li> <li>● <b>Good rigour</b> – utilises appropriate AD/AS analysis to explain the above,</li> <li>● <b>Good application to context</b> – explains with real-world examples and policies that could be used by Singapore's government.</li> </ul>	8 – 10
L2	For an under-developed answer that: <ul style="list-style-type: none"> <li>● <b>Lacks scope and balance</b> – only explains the workings and negative unintended consequence of 1 policy OR explains the workings of 2 policies but not the unintended consequences,</li> </ul>	5 – 7

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	<ul style="list-style-type: none"> <li>• <b>Lacks rigour</b> – explanation is descriptive and does not make use of appropriate AD/AS diagrams,</li> <li>• <b>Lacks application to context</b> – explanation is largely generic and lacks application to the Singapore's economy.</li> </ul>	
L1	For an answer that is descriptive, and/or without application of economic theory, and/or contains serious and pervasive conceptual errors, and/or is largely irrelevant.	1 – 4
<b>Evaluation</b>		
E3	For a balanced answer that uses economic analysis to arrive at a well-reasoned judgement substantiated with clear reasoning, on whether the tradeoffs from the policies to achieve price stability are inevitable.	5
E2	For a balanced answer that makes some attempt at evaluation or a judgement on whether the tradeoffs from the policies to achieve price stability are inevitable.	3 – 4
E1	For an answer that has no convincing overall evaluation on whether the tradeoffs from the policies to achieve price stability are inevitable.	1 – 2

- 6 The Regional Comprehensive Economic Partnership (RCEP) is the first free trade agreement (FTA) among the largest economies in Asia, including China, Indonesia, Japan and South Korea. The 15 RCEP participating countries represent almost half of the world's population and a total of 30 per cent of global GDP.**
- (a) Explain one benefit and one cost of the removal of tariffs on consumers and producers. [10]
- (b) Discuss the likely impact of signing a free trade agreement (FTA) on an economy. [15]

Part (a) Question interpretation

<b>Command word/ phrase</b>	<i>Explain</i>	Students are expected to explain one benefit and cost of the removal of tariff.
<b>Content</b>	<i>Consumer and producer surplus Costs and Revenue concepts.</i>	Explain the impact of the removal of tariff on consumer and producer. The tariff diagram is important as it help the show the change in consumer and producer surplus.
<b>Context</b>	<i>Consumer and Producer of different goods and services</i>	In the context of the consumer and producer, students to consider how consumer and producer surplus would be affected with the removal of tariff.

*This question requires students to explain one benefit / one cost to from the removal of tariff on consumer and producer. Better responses should include the tariff diagram in their answers so that students can identify the change in consumer and producer surplus explicitly.*

**Introduction:**

- The removal of an import tariff is a tax levied on imports which will reduce import prices.
- An import tariff will affect a country's trade balance, which refers to the net export revenue, export revenue (X) minus the import expenditure (M).
- It will also have affected both domestic producers and consumers, in particular in terms of consumer surplus and producer surplus.
  - Consumer surplus is the difference between the maximum price that consumers are willing and able pay for a given quantity and the market price.
  - Producer surplus is the difference between the market price and the minimum price which producers are willing and able to sell for a given quantity.

**Explain the tariff diagram**

- To illustrate this, we can consider an example of a good such as steel. In Figure 1 below, DD and SD are the domestic demand and domestic supply curves of steel. In the absence of trade, the domestic equilibrium price and quantity of steel are PE and QE respectively.
- When the country is open to foreign trade, assuming that this country is too small to affect world markets and prices (i.e. price taker), this country faces a perfectly price elastic world supply for steel Sw. That is, the country can import as much as it wants at the prevailing world price of PW.

**Key argument 1: There are benefits to consumers in terms of consumer surplus but the costs to consumers would be a fall in SOL due to a fall in employment.**

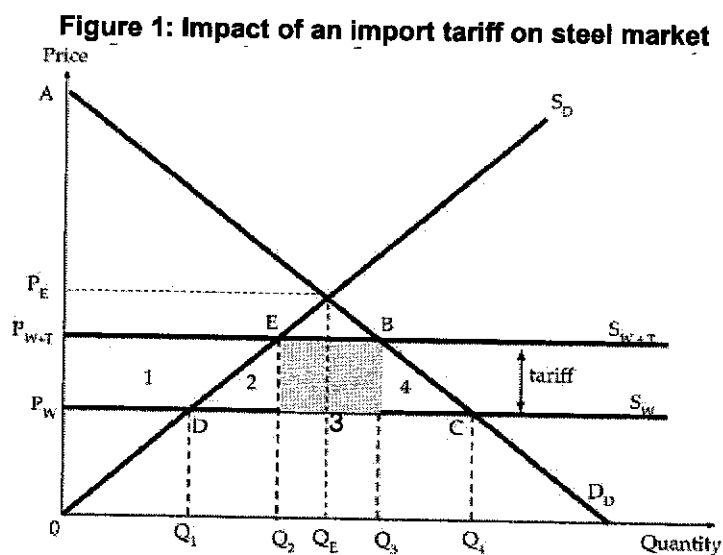
#### Benefit to consumer in terms of increase in consumer surplus

- Initially, the government levies a specific import tariff on steel imports, thus raising the world supply curve from  $S_W$  to  $S_{W+T}$  by the amount of the import tariff, raising the price of imports correspondingly from  $P_W$  to  $P_{W+T}$ .
- At  $P_{W+T}$ , domestic production is  $0Q_2$  while domestic consumption at  $0Q_3$ .
- The removal of tariff allows for free trade, shifting the world supply curve downwards from  $S_{W+T}$  to  $S_W$ . At the price  $P_W$ , domestic consumers will demand  $0Q_4$  units of steel, of which  $0Q_1$  is supplied by domestic producers and the remaining  $Q_4 - Q_1$  is imported from other countries. As a result, the number of units imported increase  $Q_3 - Q_2$  to  $Q_4 - Q_1$ .
- With the removal of tariff, the consumer surplus increase from area  $P_{W+T}TAB$  to the area  $ACPW$ . The gain in the consumer surplus is shown by the area  $1+2+3+4$

**Key argument 2: There will be costs to domestic steel producers in terms of producer revenue and producer surplus, however, the removal of tariff can be beneficial to producers in the steel related industries.**

#### Cost to domestic steel producers

- Removal of the import tariffs are taxes imposed on imports which make imports cheaper and encourage switch to consuming imports from domestically produced substitutes, ceteris paribus.
- Initially, the producer's total revenue is shown by  $0P_{W+T}EQ_2$  (World price with tariff X Quantity sold). However, with the removal of tariff, the producer's total revenue has fallen to area  $0P_WDQ_1$ .
- The initial with tariff, the producer surplus is shown by the area  $0P_{W+T}E$ .
- With the removal of tariff, the new producer surplus is shown by the area  $P_WDQ_1$ . Also, there is a loss of producer surplus is shown by the area 1.





**Alternative points****Cost to consumer in terms of SOL**

- A fall in the quantity sold of domestically produced steel might lead to a fall in demand for steel workers since labour is a derived demand. With a fall in the demand for labour, at the existing wage, the quantity demanded for labour is smaller than the quantity supplied of labour. This leads to surplus of workers working in the steel industry, leading to downward pressures on wages.
- According to the circular flow of income model, consumers are also the suppliers in the factor markets
- Assuming that the steel industry is a major industry in the country, with a fall in income, there will be less purchasing power and less ability to consume goods and services leading to a fall in material SOL. At the same time, high unemployment can lead to social unrest and higher crime rates leading to a fall in the non material aspect of SOL of the consumers.

**Benefit to domestic producers and / exporters of steel related products such as cars**

- As the cost of steel falls due to the removal of the tariff, car manufacturers are now able to access to cheaper raw materials. Since the demand for steel is likely to be price inelastic as there is a lack of substitutes for such raw materials, a fall in the price of steel will lead to a less than proportionate increase in the quantity demanded of steel, leading to a fall in the total expenditure on steel.
- Therefore, a fall in the cost of production of cars will increase the supply of cars. This will reduce the price of cars by domestic producers, making it more competitive than their overseas rivals. Demand for cars are likely to be price elastic as there are many substitutes available, a fall in the price of the domestically produced cars will lead to a more than proportionate increase in quantity demanded of cars. This will lead to an increase in total revenue, coupled with a fall in total cost, profits of domestic car manufacturers who are car exporters are likely to increase.

**Conclusion**

- The removal of tariff has both benefits and costs to consumers and producers. Overall, the society benefit as there is no longer DWL shown by the area 1 and 4.

**Part (a) Mark scheme**

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	<p>For a well-developed answer that has:</p> <ul style="list-style-type: none"> <li>• <b>Good scope</b> – addresses the benefits and costs of import tariffs on trade balance as well as domestic consumers and producers.</li> <li>• <b>Good rigour</b> – uses relevant economic analysis and diagram (import tariff) and analyses the impact in terms of consumer and producer surplus.</li> </ul>	8 – 10

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L2	For an underdeveloped answer that: <ul style="list-style-type: none"> <li>Lacks scope – addresses the impact of import tariffs only on domestic consumers or producers OR explain only either benefits or costs; and/or</li> <li>Lacks rigour – is descriptive at times with gaps in analysis.</li> </ul>	5 – 7
L1	For a largely irrelevant response that contains serious and pervasive errors, with non-existent or minimal application of economic concepts or theories.	1 – 4

(b) Discuss the likely impact of signing a free trade agreement (FTA) on an economy. [15]

Part (b) Question interpretation

<b>Command word/phrase</b>	<i>Discuss</i>	To provide a balanced analysis on the positive and negative impact of the signing of FTA on the economy
<b>Content</b>	<i>Impact on the economy</i>	Consider the impact of these approach on the macroeconomy linking to the macroeconomic goals
<b>Context</b>	<i>An economy</i>	No fixed context (in terms of countries) – possible to consider different nature of the economy, different economic structure and different stage of development

**Introduction:**

- In managing the macroeconomy, governments have four main macroeconomic objectives. They aim to achieve healthy economic growth, price stability, low rate of unemployment and favourable balance of payments / balance of trade. Some of these goals can be achieved through the signing of FTA.

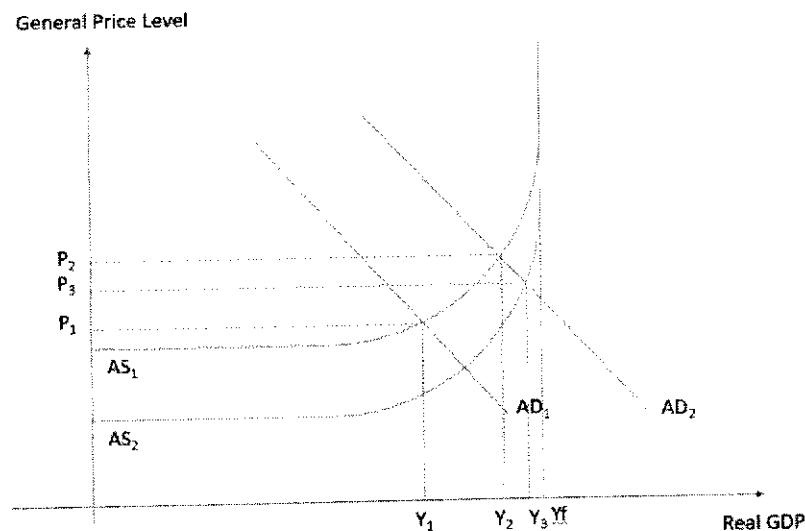
**Key argument 1: Positive impact from the signing of FTA on the economy in terms of macroeconomic goals.**

- The signing of FTA enables a country to achieve economic growth, lower unemployment, improve balance of trade and achieve price stability.
- The signing of FTAs would allow access to a greater number of foreign markets which could lead to a rise in demand for a country's exports. This would lead to a rise in export revenue. Assuming ceteris paribus, the net export revenue increases.
- As net export revenue (X-M) is a component of AD, a rise in X-M would lead to a rise in AD. When AD rises, there is an unplanned fall in inventories that will cause firms to increase output and hire more factors of production. Household incomes will rise because firms now hire more workers. This rise in incomes will result in an increase in induced consumption of domestic goods and services that leads to a further increase in AD. This is reflected in Figure 2 as an

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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 any demand deficient unemployment from  $(Y_f - Y_1)$  to  $(Y_f - Y_2)$  and helping the government achieve the goal of low unemployment rates.
- Also, FTAs can also reduce barriers to importing factors of production. 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 producer are more willing and able to supply goods at every price level. This leads to a fall in the general price level from  $P_2$  to  $P_3$ , reducing cost push inflation. Real GDP also increases from  $Y_2$  to  $Y_3$ , leading to further actual growth.



**Key argument 2: Negative impact from the signing of FTA on the economy in terms of macroeconomic goals.**

- FTA may lead to negative impact on the economy in the form of structural Unemployment.
- Free trade agreements will help to promote free trade which may lead to countries specialising in goods which the country has comparative advantage in according to the Theory of Comparative Advantage. However, in the process of specialisation in goods which the country has comparative advantage in, there will be a fall in the demand for labour in the declining industries whereby the goods are now imported and they may become unemployed. However, they may lack the skills to take up jobs that are created in the expanding sectors due to occupational immobility. As such, structural unemployment arises due to the mismatch in skills between the unemployed and the jobs available in the expanding industry.

**Alternative Points****Hinder potential growth**

- A trade bloc created by FTA may lead to trade diversion. For example, a country might have the CA in producing semi-conductors and her exports are therefore highly competitive. However, if the country is not a member of the FTA, there will be tariff imposed on her exports.
- Member country of the FTA would have to buy factor inputs such as semi-conductor at a higher price from member countries rather than those from non-member countries that have a CA in the production of these goods. This is because their goods are now less competitive due to the tariff imposed.
- This might lead to less incentive for firms to innovate and increase their productivity. A fall in productivity might lead to a fall in productive capacity and therefore, resulting in a fall in LRAS, hindering potential growth.

**More vulnerable to external shocks**

- Signing of FTA might make economies **more reliant on external demand** for growth, hence, more vulnerable to external shocks.
- A fall in world incomes would lead to a fall in world consumption leading to a fall in demand for exports.
- An export led decline especially in a small and open economy such as the Singapore economy will see a fall in  $(x-m)$  leading to a fall in AD, via the multiplier lead to a larger fall in real national income. Since labour is a derived demand, there will be a fall in demand for labour as producers now employ less factors of production, leading to demand deficient unemployment.
- The increase in trade activities has led to producer' dependence on low cost and low diversity supply chain. However, the recent pandemic's immediate and enduring impact on supply chain has led to **supply chain disruptions** which reflected how fragile the interconnected global supply chains have become.
- The lack of supply of component parts of a good will disrupt the production of the final product, producers will have to source for more suppliers in their home countries, which might increase the cost of production, leading to a fall in SRAS, causing cost push inflation

**Evaluative Conclusion:**

- **[Stand + Situation]** Traditionally, the signing of FTA will result in net benefits most economies, especially for economy that is small and open such as Singapore. With the signing of FTA, a small economy like Singapore (with small domestic market) can have access not only to larger overseas markets but also gain access to cheaper raw materials which compensate for her lack of natural resources. Also, trade benefits have been most apparent in FTAs where countries have vastly different economic structures. CA in different areas of production allows both member countries to gain because of specialisation. In the case of RCEP, it consists of countries of different economic structure and stage of development and are likely to reap the benefits of free trade. That said, the threat of trade diversion should not be ignored as it will distort the workings of the theory of CA.

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- **[Magnitude]** Overall, whether signing FTA diverts more than creates trade depends on the size and extent of existing trade barriers with non-member countries and the degree to which the effect of removal of barriers to trade between members.
  - For example, at the time of signing, trade barriers in Australia and New Zealand were significantly higher than the OECD average. Nevertheless, ANZCERTA was deemed not to have caused trade diversion, as both nations simultaneously lowered their trade barriers with other trading partners alongside the ANZCERTA initiative aimed at removing all trade barriers between them. This coordinated approach effectively mitigated the risk of trade diversion.
  - In reality, this seems to indicate that the problem with trade diversion on an economy is likely to be minimal as countries are likely to still reduce their trade barriers with others to enjoy the benefits of free trade.
- **[Alternative]** To a large extent, the signing of FTA is likely to bring about more benefits than costs to an economy. However, FTA as a policy alone is insufficient to maximise the benefits and minimise the negative impact of free trade.
  - Governments should implement supply side policies to create CA and supply chain resilience – the ability to prepare for and adapt to changing global conditions to recover rapidly from supply shock disruptions.

Part (b) Mark scheme

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that has: <ul style="list-style-type: none"> <li>• Good balance and scope: Answer considers the positive and negative impacts of FTAs on at least two macroeconomic goal</li> <li>• Good rigour: Answer uses relevant macroeconomic framework with well-labelled diagram.</li> </ul>	8 – 10
L2	For an underdeveloped answer that: <ul style="list-style-type: none"> <li>• Lacks balance and scope – answer considers only the positive OR negative impacts of FTAs OR answer considers both the positive and negative impacts of FTA, but only on one macroeconomic goal</li> <li>• Lacks rigour – is descriptive at times with gaps in analysis.</li> </ul>	5 – 7
L1	For a largely irrelevant response that contains serious and pervasive errors, with non-existent or minimal application of economic concepts or theories.	1 – 4
<b>Evaluation</b>		
E3	For an answer that arrives at an analytically well-justified judgement on whether positive impact outweighs negative impact on the signing of FTA on an economy supported with application to context.	4 – 5
E2	For an answer that makes some attempt at evaluation or a conclusion on the extent to which positive impact outweighs negative impact on the signing of FTA on an economy.	2 – 3

## 2024 TJC JC2 H2 Prelim Suggested Answer with Comments

E1	For an answer that gives an unsupported evaluative statement(s) on whether positive impact outweighs negative impact on the signing of FTA on an economy.	1
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