

RIVER VALLEY HIGH SCHOOL  
JC 2 Preliminary Examination  
in preparation for General Certificate of Education Advanced Level  
Higher 2

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**ECONOMICS**

**9570/01**

Paper 1 Case Study

**16 September 2024**

**2 hours 30 minutes**

Additional Materials: Answer Booklet

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**READ THESE INSTRUCTIONS FIRST**

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

Answer Question 1 and Question 2 on **separate** booklets. You can ask for an additional booklet if you need more than one for a question.

For each Answer Booklet:

Write your name, Centre number and index number on the first page of all Answer Booklets that you hand in. Write clearly and use capital letters.

For each booklet, use both sides of the paper.

Write in dark blue or black pen. HB pencil may be used for graphs and diagrams only.

**DO NOT WRITE ON ANY BARCODES.**

Write the number of the question you are responding to in the first margin.

↓

Question	Part	
1	ai	
1	aii	

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If the question you are responding to also contains parts, for example 1a, write the question part in the second margin.

Do not tear out any part of the Answer Booklet.

All work must be handed in. If you have used any additional booklet, please insert it inside the first Answer Booklet.

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This document consists of 7 printed pages and 1 blank page.

**[Turn over]**

Answer all questions.

### **Question 1: Changes in the market for air travel**

#### **Extract 1: Revenge travel wreaks havoc on more than just airports**

Air travel is making a comeback. But the aviation sector is struggling to meet surging demand as major airports worldwide are plagued by endless queues at counters and chaos at baggage carousels due to shortage of passenger service crew. This revenge travel can be attributed to pent-up demand as holidaymakers try to make up for lost time.

Besides causing headaches for customers and companies, revenge travel is bad news for our warming planet. COVID-19 grounded planes to an unprecedented extent in 2020, resulting in huge drops in flight-related carbon emissions. The International Energy Agency said emissions from international aviation fell almost 45 per cent from 2019 to 2020, a decline comparable to taking 100 million cars off the road. History suggests the rebound in travel we are seeing now will be accompanied by an increase in carbon emissions.

To minimise the environmental impact of our post-pandemic adventures abroad, we can consider other ways to travel besides flying. Generally, planes are the heaviest emitters and trains the lightest. A flight from Singapore to Kuala Lumpur (KL) produces 62kg of CO<sub>2</sub> per passenger while a passenger who travels to Kuala Lumpur by train only emits 0.8kg of CO<sub>2</sub>. The potential carbon savings from commuting to Malaysia by train could be substantial. To encourage consumers to choose trains over planes, it is essential to improve the convenience and speed of train travel. The ongoing discussions between Malaysia and Singapore about reviving the terminated KL-Singapore High Speed Rail project offer hope. A direct high-speed rail link would significantly reduce travel time and make train travel a more attractive option, encouraging more people to opt for this environmentally friendly mode of transport.

*Source: Channel NewsAsia, 07 August 2022*

#### **Extract 2: Asian airlines rush to restore routes as air travel recovers from Covid**

Ahead of the year-end travel season, Asian airlines are ramping up flight options by training and hiring pilots and in-flight crew in a battle to board flyers, with air travel continuing to recover as Covid concerns remain largely downgraded.

But analysts and industry groups note that regional airlines are closely monitoring rising fuel prices and interest rates, as economic uncertainties could dampen earnings while airlines are grappling with a gradual recovery.

Singapore Airlines (SIA) reported a record operating profit of SG\$1.23 billion (\$740 million) for the six months ending in September. This marks a significant turnaround from the SG\$620 million full-year loss in 2021, driven by increased flight demand following Singapore's reopening to vaccinated travellers in April. However, SIA, like many other carriers, remains wary of persistently high fuel costs, inflation pressures across supply chains, geopolitical tensions, and the looming risk of a global recession beyond the Chinese New Year in January.

*Source: Financial Times, 21 December 2022*

### **Extract 3: The aviation sector wants to reach net zero by 2050**

Aviation is responsible for around 2.5% of global CO<sub>2</sub> emissions, with most aircraft powered by conventional jet fuel. The European Commission predicts that by the middle of the 21st century, demand for flying could increase aviation's greenhouse gas emissions by upwards of 300% over 2005 levels if no drastic measures are taken to reduce them.

The aviation industry has adopted the goal of reaching net-zero carbon emissions by 2050. In October, the UN's International Civil Aviation Organization (ICAO) led two weeks of negotiations involving 184 nations to agree on CO<sub>2</sub> emissions reduction measures. One of these include ramping up innovative aircraft technologies, "streamlining" flight operations and the increased production and use of sustainable aviation fuels (SAF).

Sustainable Aviation Fuels can reduce emissions by 80% according to the International Air Transport Association (IATA). SAF can be made from several sources ranging from agricultural waste to carbon captured from the air. It is fully compatible with existing aircraft and fueling infrastructure. However, high production costs and limited supply has slowed its adoption. It is estimated that SAF comprises less than 0.1% of all conventional jet fuel currently used. To accelerate the adoption of SAF, stakeholders such as businesses and governments must collaborate on effective strategies. Governments can incentivise adoption by providing subsidies to airlines to offset costs. This initiative aims to establish a viable pathway for the aviation sector to achieve significant decarbonisation in the coming years.

*Source: World Economic Forum, 9 December 2022*

### **Extract 4: Overdue brand reboot aims to rescue Air India's battered image**

Almost a year has passed since India's biggest conglomerate bought Air India Ltd., promising to turn it into a world-class airline.

Tata Group, which paid \$2.2 billion to buy Air India back from the government, has a five-year transformation plan called Vihaan -- Sanskrit for new dawn. UK-based FutureBrand was last week brought in to help with the makeover, which could include dropping the airline's "outdated" Maharajah mascot, local media reported.

There's a "desperate need to improve its product and service," said Shashank Nigam, chief executive officer of airline brand-strategy firm SimpliFlying. Campbell Wilson, who shifted from Singapore Airlines Ltd.'s low-cost unit to become Air India CEO over the summer, told reporters recently that aircraft interiors will be refurbished, including seats, cushions and carpets.

Nigam said Air India needs to position itself as a progressive brand that caters to younger people, which is particularly important given India's demographics and sheer size of its young population. By previously branding itself as the custodian of Indian culture and heritage, the airline gave off an impression of being old fashioned and stuck in time, he said, adding that its fleet is old and "needs urgent rejuvenation."

Tata said last week that its Vistara joint venture with Singapore Airlines would be merged into Air India, creating the country's second-biggest carrier. "Partnerships like this combine sales effectiveness, customer bases, loyalty programs of multiple airlines, so that you can really make one plus one be worth more than two," said Allan Schulte, Bain & Co.'s head of Asia-Pacific airlines, logistics and transportation.

*Source: Bloomberg, 7 December 2022*

**Table 1: Top Indian Airlines Market Share in 2022**

Airline	Market Share (%)
IndiGo	56.7
Vistara	9.2
Air India	9.1
AirAsia India	7.6

Source: Bloomberg, 7 December 2022

### Questions

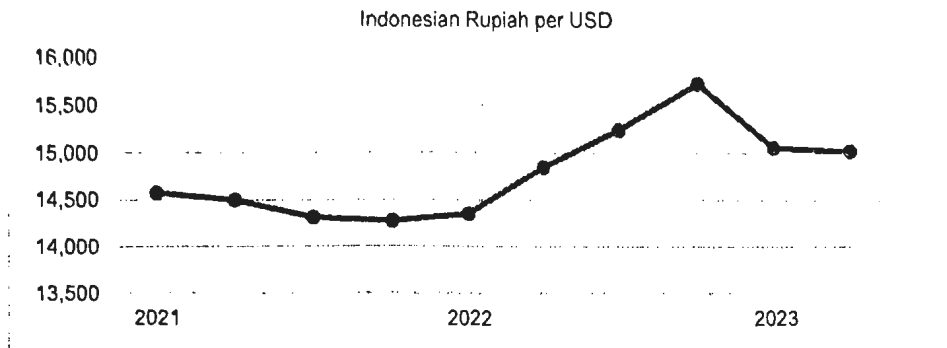
- (a) Using the evidence in Extract 3, explain whether the cross elasticity of demand between sustainable aviation fuel (SAF) and conventional jet fuel is positive or negative. [3]
- (b) Explain why the KL-Singapore high speed rail should not be considered a public good. [3]
- (c) Using a supply and demand diagram, explain why the price of air travel might have increased sharply following the recovery of the air travel industry from the impact of Covid-19. [4]
- (d) Explain the market structure of Indian airline industry in 2022. [2]
- (e) Discuss whether Air India's plan to revive its carrier is likely to increase its profits. [8]
- (f) Discuss whether providing subsidies to airlines for adopting sustainable aviation fuel (SAF) is the best policy to improve the efficiency of resource allocation in the market for air travel. [10]

[Total: 30]



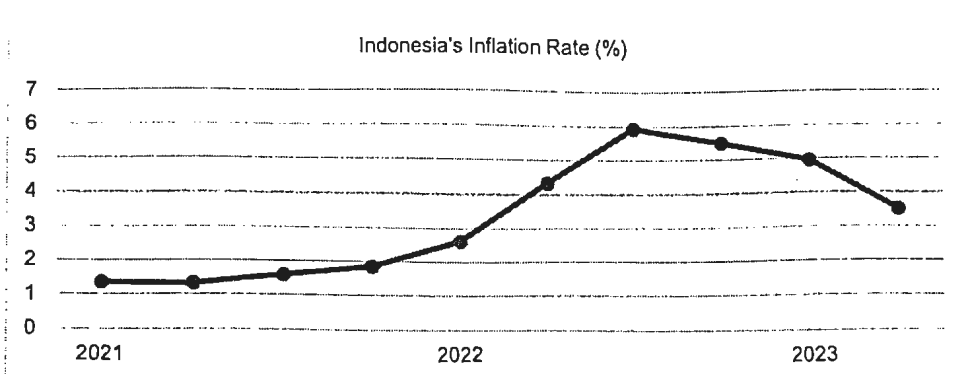
## Question 2: Impact of Russia-Ukraine War on Indonesia and Singapore

**Figure 1: Indonesian Rupiah per USD, 2021-2023**



Source: Organization for Economic Co-operation and Development (OECD)

**Figure 2: Indonesia's Inflation Rate (%), 2021-2023**



Source: Trading Economics

### Extract 5: Growth is slowing in Indonesia

After recording economic growth of 5.3% in 2022, the strongest for almost a decade, Indonesia is now braced for growth to slow down due to the Russia-Ukraine conflict.

The OECD recently mentioned that the main downside risks for Indonesia included "persistent tensions on energy, food and fertilizer markets." Besides the food sector, energy sectors such as the coal and crude oil markets are amongst the worst-hit by the war. Given that Indonesia also imports fertilizer from Russia, this has pushed inflation in the country higher. So far, Indonesia's moves to mitigate the deteriorating economic situation have not been met by an effective Russian response. Last summer, in an effort to obtain "security guarantees for food and fertilizer supplies from both Ukraine and Russia," President Joko Widodo traveled to Moscow to meet Russian President Vladimir Putin. Hopes that Widodo would be able to secure such guarantees from Moscow, along with a restored energy supply chain, went unfulfilled.

Although, by comparison with many countries, inflation of around 5.5% is relatively low, it still represents a seven-year high for Indonesia. In January, the country's central bank, Bank Indonesia, lifted its interest rates by 25 basis points to 5.75%, the sixth consecutive increase. In August they were just 3.5%. The Indonesian government has worked hard to protect Indonesian consumers from price increases, but the government has had to raise subsidized fuel prices by 30% to protect the state budget.

A few months ago, things didn't look so bad. While the conflict led to rising prices of global commodities, it lifted Indonesia's export revenue of iron, steel, coal and palm oil and contributed to a stronger Rupiah. However, it was partially constrained by the damaging impact of weakening global demand. In January, Indonesia's Coordinating Minister for Economic Affairs Airlangga Hartarto said exports would only grow by 12.8% this year, less than half the 29.8% growth cited for 2022.

Indonesia, one of Asia's success stories of recent years, has been less hard-hit than many emerging economies by the war in Ukraine. Yet storm clouds persist and the severe slowdown being experienced by advanced economies is set to cause more turbulence for Indonesia.

*Source: Business Insider, March 16 2023*

#### **Extract 6: Indonesia bans the export of palm oil**

Indonesia's palm oil export ban kicked off on April 28, 2022, in one of the most drastic cases of food protectionism since the war erupted in Ukraine. Palm oil is by far the most consumed and traded edible oil in the world. Grown only in the tropics, the oil palm tree produces high quality oil that is used as a common ingredient in cosmetic and household items, such as cooking oil.

The ban comes as Indonesia gripes with domestic cooking oil shortages and reins in high prices that had triggered recent protests in the country. Ironically, Indonesia is the world's largest producer of crude palm oil. Indonesia President Joko Widodo said that the ban would be lifted once the local demand for food staples is met, adding that it was "ironic" that the country had difficulty getting cooking oil.

However, the government acknowledged that the policy may result in unsold harvests for farmers. There are also concerns about when Indonesian producers will run out of storage capacity to store oil that they can no longer export. Palm oil production is vital to the economy of Indonesia, which exported US\$28.52 billion of palm oil in 2021.

*Source: Asean Briefing, 29 April 2022 and The Straits Times, 28 April 2022*

#### **Extract 7: Key risks to Singapore economy**

Russia may not be one of Singapore's major trading partners, but the disruption to its exports because of its war with Ukraine can still hurt the Republic's growth prospects. This is because Russia's role in the global economy is more as a major energy supplier, said the Monetary Authority of Singapore (MAS) in its macroeconomic review report. Uncertainty over energy supplies from Russia has sent oil prices soaring above US\$100 a barrel, driving up inflation worldwide and indirectly putting Singapore's economic outlook at risk by pushing up production costs and consumer prices.

Aside from the effect on prices, there are other channels of indirect exposure through which disruptions to Russia's exports could have knock-on effects on Singapore. If key export partners with significant exposures to Russia, such as China and European Union, suffer income losses, this may in turn reduce demand for Singapore's exports.

Indirect exposure also comes through supply chain linkages, as goods imported from other countries may contain Russian components that are used in Singapore as intermediate inputs for products that are ultimately exported. Energy-related inputs account for a particularly high share of total input requirements in the petrochemical (40.3%), air transport (31.5%) and water transport (14.4%) industries. Higher energy prices will raise production costs in these industries significantly, with firms potentially cutting supply and passing on the cost increases to other intermediate stages of production,

Thus, the duration and intensity of economic spillovers from the Russia-Ukraine conflict are key risks for Singapore, MAS said. The impact of the war on the economy may be amplified if higher inflation, tighter financial conditions, and heightened uncertainty restrain domestic consumption and investment.

*Source: The Straits Times, 28 April 2022*

### Questions

- (a) Using Figures 1 and 2, explain how the change in inflation rate in Indonesia leads to the change in the value of the Indonesian Rupiah from 2021 to 2023. [4]
- (b) With reference to Extract 5 and using an aggregate demand and supply diagram, account for the slowing economic growth in Indonesia. [4]
- (c) Extract 6 mentions that Indonesia has imposed a palm oil export ban in 2022.  
Using the concept of equity, explain one reason why this ban can be justified and one reason why it cannot be justified. [4]
- (d) Discuss whether increasing interest rates is the best way to tackle inflation in Indonesia. [8]
- (e) Discuss the possible impacts of the Russia-Ukraine war on Singapore's economy. [10]

**[Total: 30]**

**(a) Using the evidence in Extract 3, explain whether the cross elasticity of demand between sustainable aviation fuel (SAF) and conventional jet fuel is positive or negative. [3]**

- Cross elasticity of demand between sustainable aviation fuel and conventional jet fuel is positive ( $XED > 0$ ) [1]
- Because they are both substitutes in consumption [1]
- According to Extract 3, it says that “sustainable aviation fuels is fully compatible with existing aircraft and fuelling infrastructure”, this means that both can be used in place of one another as a source of energy to power airplanes to bring passengers across the world [1].

**(b) Explain why the KL-Singapore high speed rail should not be classified as a public good. [3]**

- A public good is a good or service that has the characteristics of non-excludability and non-rivalry in consumption, as well as non-rejectability.
- A new rail network should not be classified as a public good because it is rivalrous. An additional passenger would diminish the amount of rail tickets left for other users [1]
- It is excludable because passengers who do not pay to use the rail will not be able to board the train to use the rail network. [1]
- It is rejectable because individuals who do not want to use the rail network can choose not to buy a rail ticket. [1]

**(c) Using a supply and demand diagram, explain why the price of air travel might have increased sharply after air travel recovers from Covid. [4]**

- As Extract 1 mentioned, with the relaxation of travel restrictions, there is a “surging demand” for air tickets. This is attributed to revenge travel due to the change in taste and preferences towards travelling after Covid-19. Thus, consumers are more willing to travel at each price level, causing demand for air tickets to increase. With reference to Figure 1, the increase in demand for air tickets causes the demand curve to shift rightwards from  $D_0$  to  $D_1$ . [1] At initial equilibrium price  $P_0$ , the increase in demand results in a shortage of air tickets, which exerts an upward pressure on the price of air tickets. As a result, price of air travel increases.
- To analyse the sharp increase in price, the concept of price elasticity of supply (PES) is required. PES refers to the responsiveness of the change in quantity supplied given a change in the price of good. PES for air travel is likely to be  $< 1$ . This is because a substantial period of time is needed to train passenger service crew, pilots and in-flight crew as highlighted in Extract 1 and 2. This means that airlines cannot readily increase the number of flights when price increases. [1]
- Since the quantity supplied increases less than proportionately in response to an increase in price, prices increase sharply to resolve the shortage. Thus, prices increase sharply from  $P_0$  to  $P_1$  as shown in Figure 1. [1]



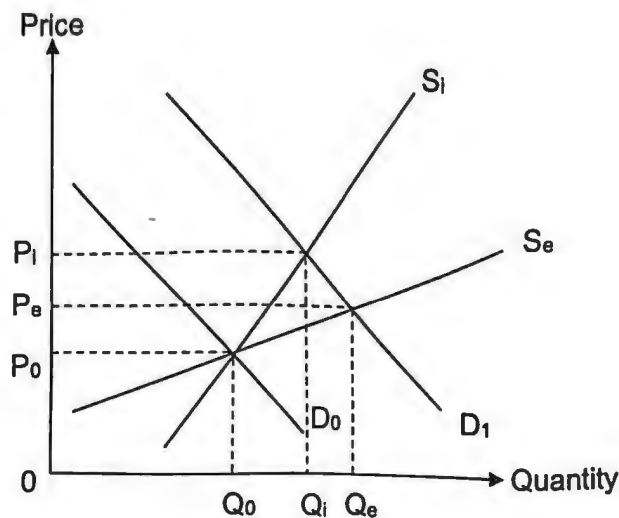


Figure 1: market for air tickets [1]

(d) Explain the type of market structure that the Indian airline industry is in. [2]

- Oligopoly [1]
- Concentration ratio of 3 main airline companies – IndiGo, Air India, and Vistara is 76%, which suggest a large market share dominated by a few sellers. [1]

(e) Discuss whether Air India's plans to revive its carrier is likely to increase their profits. [8]

### Introduction

Air India's plans to revive its carrier can increase their profits, either through an increase in total revenue, or a fall in total cost (or both) given that  $\pi = TR - TC$ . However, its plans can also lead to a fall in profits, arising due to external factors such as rising fuel prices, inflationary pressures across the supply chain and economic uncertainties.

### Thesis: Plans will increase profits

As mentioned in Extract 4, "aircrafts interiors will be refurbished, including seats, cushions, and carpets". With these improvements made, it gives rise to product innovation and reduce the substitutability of the Air India's service when compared to other airlines. In addition, coupled with Air India's product promotion where they position itself as "progressive brand that caters to young people". Both of these changes will lead to a shift in taste and preferences towards Air India's flights due to better quality and relevant services, leading to a rise in demand and make the demand for Air India's flight to be more price inelastic ( $|PED| < 1$ ) as their flights becomes less substitutable. As such, Air India can increase the price of its flights, which will lead to a less than proportionate fall in quantity demanded and cause total revenue to increase. Assuming ceteris paribus, Air India will see an increase in profits.

As seen from Figure 2, the rise in demand and the reduced substitutability of Air India flights has caused demand to increase from  $DD_0$  to  $DD_1$ . This will also cause total profits to increase from  $P_0ABC_0$  to  $P_1CDC_1$ .

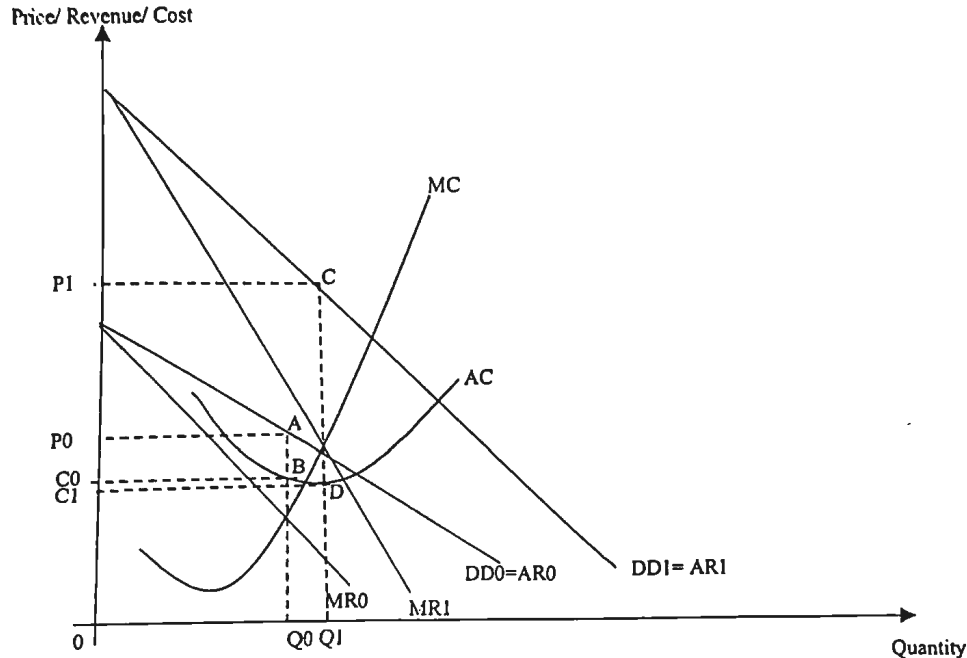


Figure 2

### **Antithesis: Plans will not increase profits.**

However, Air India might still experience a fall in profits even with the execution of their plans. As seen from Extract 2, regional airlines face “rising fuel prices and interest rates”. As fuel is a factor input necessary for air travel, the rise in cost of production will cause profits to fall.

This can be further compounded by economic uncertainties like “risk of global recession”, as mentioned in Extract 2, which might deter individuals from travelling, as they might expect their income to fall. As air travel is a normal good, falling income will lead to a fall in demand for air travel. With price and quantity decreasing, a fall in revenue, and thus profits is likely to be observed. As such, the increase in demand as seen in Figure 2 due to product innovation and promotion might not be significant or might not even exist.

### **Evaluation**

To conclude, whether Air India's plans to revive its carrier will increase profits might be dependent on the extent of innovation or product promotion that is done. Should the revamp be on superficial changes, consumers might not be willing to switch from flying with other airlines to flying with Air India. While its revival plan presents promising opportunities for profitability through strategic rebranding, partnerships and operational efficiencies, ability to navigate industry trends, technological advancements and regulatory changes, particularly in environmental sustainability and fuel efficiency will also be essential for sustained profit growth.

Level	Knowledge, Application, Understanding & Analysis	Marks
L2	Answers in this level will include analysis of how profits of Air India could rise AND how profits of Air India can fall due to rising cost and economic uncertainties.  Note: Cap at 2m for each thesis if reference to case materials is not made.	4-6
L1	Answers in this level will show superficial understanding of Air India could rise AND how profits of Air India can fall due to rising cost and economic uncertainties.	1-3
<b>Evaluation</b>		
E2	Well-developed judgement on how profits will change. E.g., actions of competitors and degree of innovation efforts.	2
E1	Unsupported judgement on how profits will change. E.g., actions of competitors and degree of innovation efforts.	1

- (f) Discuss whether providing subsidies to airlines to adopt sustainable aviation fuel (SAF) is the best policy to improve the efficiency of resource allocation in the air travel market. [10]

Intro (brief explanation of market failure in the market for air travel)

In the market for air travel, negative externalities arise from the usage of conventional jet fuel, which is a factor input used in the provision of air travel that gives rise to carbon emissions as mentioned in Extract 1 and 3. This results in the Marginal Social Cost (MSC) being higher than MPC and the free market output ( $Q_m$ , where  $MPB = MPC$ ) exceeding the socially optimal level of output ( $Q_s$ , where  $\text{Marginal Social Benefit} = MSC$ ), thus there is over-allocation of resources in the market for air travel and welfare loss of area ABC as seen in Figure 3.

Thesis: Explain how providing subsidies to airlines to adopt sustainable aviation fuel (SAF) improves the efficiency of resource allocation in the market for air travel and its limitation

With governments providing subsidies to airlines to adopt SAF, this will reduce the cost of using SAF as an alternative fuel. If the subsidies are large enough such that the cost of using SAF is lower than using conventional jet fuel, airlines will then be enticed to switch to using SAF instead. As mentioned in Extract 3, the usage of SAF can reduce emissions by 80% and SAF is fully compatible with existing aircraft and fuelling infrastructure. This means the amount of negative externality generated due to the provision or supply of air travel will be much lesser, and hence, the divergence between MSC and MPC will also be smaller, resulting in a lower MSC' as shown in Figure 3. Thus, the new socially optimal level of output is at  $Q_s'$  where  $MSC' = MSB$ . Since the difference between  $Q_s'$  and  $Q_m$  is smaller, the problem of over-allocation of resources in the market for air travel is also reduced.

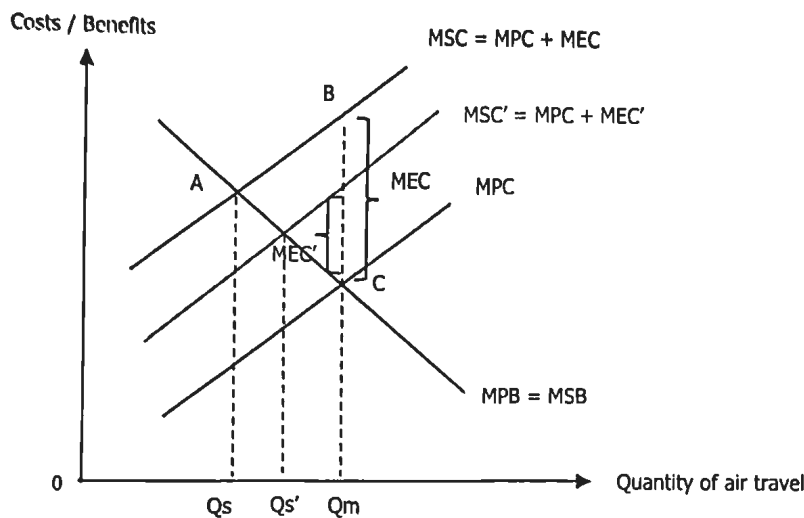


Figure 3: Over-allocation of resources in the market for air travel

However, it does not eradicate the problem of environmental pollution as the usage of SAF still generate carbon emissions, albeit much lesser. Thus, pollution can only be reduced but not eliminated and there is still over-allocation of resources in the market.

Anti-thesis: Explain how another policy improves the efficiency of resource allocation in the market for air travel and its limitation

Extract 1 mentions that another policy to improve the efficiency of resource allocation in the market for air travel would be to consider other ways to travel besides flying, like rail travel. For example, "a flight from Singapore to Kuala Lumpur produces 62kg of CO<sub>2</sub> per passenger while a passenger who travels by train only emits 0.8kg of CO<sub>2</sub>".

As explained earlier, the allocative inefficiency in the market for air travel arises due to the negative externalities from the usage of conventional jet fuel. Thus, one way to reduce such usage would be to encourage individuals to switch to the other modes of transport like rail travel. This can be done via improving the connectivity/ widening the rail transport networks. As individuals change tastes and preferences and switch to rail travel, this reduces the MPB of air travel to MPB' in Figure 4, leading to a lower level of air travel. The new free market equilibrium occurs at Qm' where MPB' = MPC. Since Qm' is the same as Qs, allocative efficiency is achieved.

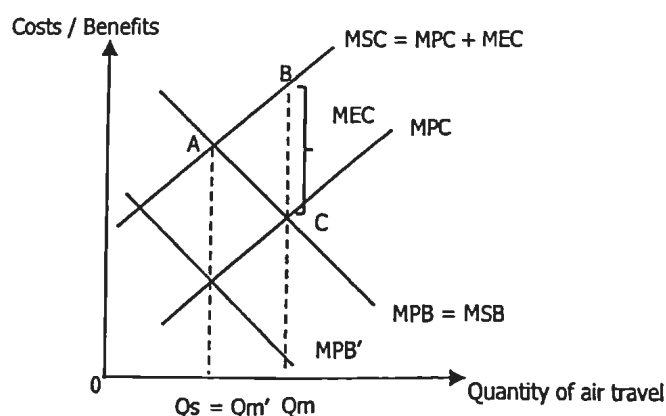


Figure 4: Over-allocation of resources in the market for air travel

However, pulling people away from air travel to rail travel is a difficult task which requires time, money and resources to first improve and build up the rail transport network. More importantly, there needs to be a change in mindset, which does not happen overnight. This is because it might be inconvenient for travellers as travellers need to 'hop on three different trains to get from Woodlands to Kuala Lumpur, which could take up to eight hours in total' as mentioned in Extract 1.

### Conclusion

Providing subsidies to airlines to adopt SAF might be the best policy in the short run to improve efficiency of resource allocation in the market for air travel because it tackles the root cause directly by reducing the amount of negative externality (i.e. pollution). In addition, promoting greater use of other modes of transport i.e. rail travel is a more long-term measure which effects will not be seen immediately.

As each policy has its advantages and disadvantages, both providing subsidies to airlines to adopt SAF and encouraging greater use of other modes of transport can be implemented so that both policies complement each other.

Level	Knowledge, Application, Understanding & Analysis	Marks
L2	Well-developed explanation on how providing subsidies to airlines to adopt sustainable aviation fuel can improve efficiency of resource allocation in the market for air travel and its limitation AND another policy and its limitation.	5-7
L1	Under-developed explanation on how providing subsidies to airlines to adopt sustainable aviation fuel can improve efficiency of resource allocation in the market for air travel and its limitation AND another policy and its limitation.  OR  Well-developed explanation on how providing subsidies to airlines to adopt sustainable aviation fuel can improve efficiency of resource allocation in the market for air travel and its limitation OR another policy and its limitation.	1-4
<b>Evaluation</b>		
E3	Well-reasoned judgement on whether providing subsidies to airlines to adopt sustainable aviation fuel is the best policy to improve efficiency of resource allocation in the market for air travel.	3
E2	Under-developed judgement on whether providing subsidies to airlines to adopt sustainable aviation fuel is the best policy to improve efficiency of resource allocation in the market for air travel.	2
E1	Unsupported judgement on whether providing subsidies to airlines to adopt sustainable aviation fuel is the best policy to improve efficiency of resource allocation in the market for air travel.	1



## 2024 J2 Prelim Macro CSQ2 Suggested Answers

(a) (i) Using Figures 1 and 2, explain how the change in inflation rate in Indonesia leads to the change in the value of the Indonesian Rupiah from 2021 to 2023. [4]

- From Figure 2, inflation rate over the period has generally increased.  
When Indonesia's inflation rate increases, assuming that other countries' have lower inflation rates, this means a relatively higher inflation rate in Indonesia.
- As such, Indonesia's exports should be relatively more expensive while imports become relatively cheaper. This translates to a fall in quantity demanded for Indonesia's exports. Assuming that the demand for Indonesia's exports is price elastic, this leads to a fall in Indonesia's export revenue which implies a fall in demand for the Indonesian Rupiah. OR  
Indonesians will switch from consuming domestic products to relatively cheaper imports, hence increasing their demand for imports. This will lead to an increase in import expenditure which implies an increase in supply of the Indonesian Rupiah.
- Hence, given a rise in Indonesia's inflation rate, the Rupiah should depreciate, as seen in Figure 1.

(b) With reference to Extract 1 and using an aggregate demand and supply diagram, account for the slowing economic growth in Indonesia. [4]

- Extract 1 mentions that Indonesia also imports fertilizer from Russia and due to the Russia-Ukraine war, prices of fertilizer have increased. OR Extract 1 mentions energy prices are contributing to the inflation. As such, there is an increase in costs of factor inputs. This in turn will increase the unit cost of production and is likely to cause SRAS to fall from  $SRAS_0$  to  $SRAS_1$  as seen in Figure 1 below.
- On the other hand, extract 1 mentions "exports would only grow by 12.8% this year". This suggests a rise in net exports (X-M), ceteris paribus, and hence a rise in AD from  $AD_0$  to  $AD_1$  as seen in Figure 1 below.
- With fall in SRAS smaller than the rise in AD, there will be an increase in real GDP from  $Y_0$  to  $Y_1$ , smaller than rise in real GDP from  $Y_0$  to  $Y_2$  if SRAS had not fallen, accounting for the slowing economic growth.

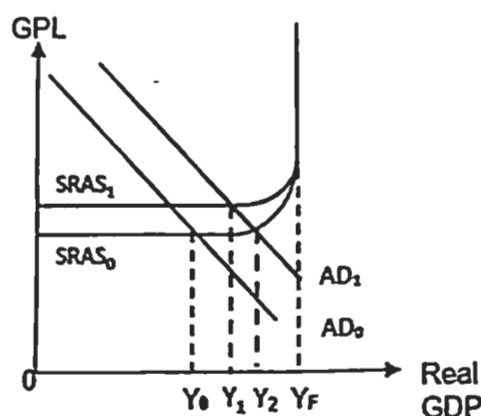


Figure 1

**(c) Extract 2 mentions that Indonesia has imposed a palm oil export ban in 2022.**

**Using the concept of equity, explain one reason why this ban can be justified and one reason why it cannot be justified. [4]**

- The export ban can be justified as it increases the domestic supply of palm oil which helps to lower its price. Given that palm oil is a common ingredient used in the production of cooking oil, an essential good, (Ext 2), the fall in price of palm oil will also lower the cost of producing cooking oil and hence lower the price of cooking oil, allows Indonesians, especially the low-income households, to have the ability to purchase cooking oil.
- However, the ban cannot be justified as it could lead to "unsold harvests for farmers" (Extract 2). This suggests that Indonesia could be experiencing a surplus instead. A ban will mean that domestic demand may be insufficient to clear the stock and farmers may receive less income as they sell less palm oil, reducing their ability to consume other essential goods and services.

**(d) Discuss whether increasing interest rates is the best way to tackle inflation in Indonesia's economy. [8]**

Increasing interest rates refers to the use of contractionary monetary policy. Whether this is the best way to tackle inflation in Indonesia's economy will depend on its effectiveness vis a vis other policy options and also the type of inflation that is present.

**[Analyse how increasing interest rates can tackle inflation]**

Increasing interest rates can help to tackle inflation in Indonesia. When interest rates are raised, cost of borrowing increases and this would reduce households' consumption (C) of big ticket items such as cars. Moreover, the rewards to savings will be higher with increased interest rates which incentivizes consumers to save more, hence cutting down on consumption. Firms would also likely reduce investment (I) as investment projects which were once viable now becomes unviable at the higher interest rate. With increased interest rates, there would also be increased hot money inflows which will increase the demand for Indonesia Rupiah. This will lead to an appreciation of the Rupiah, ceteris paribus. An appreciation of the Rupiah will lead to an increase in the price of Indonesia's exports in terms of foreign currency and a fall in price of imports in terms of Rupiah. Assuming Marshall Lerner condition ( $PED_x + PED_m > 1$ ) holds, Indonesia's net exports (NX) will fall. The combined fall in C, I and NX will lead to a fall in AD and hence lead to a fall in general price level, in turn tackling inflation. This helps to also alleviate the rising price pressure caused by the rising export revenue (Ext 1) earned by Indonesia.

However, raising interest rates may not be very effective in tackling inflation due to the impact lag as it takes time for the full effects of interest rates changes to work through the economy.

Extract 1 also states that there has been 6 consecutive increase of interest rates and inflation still seems to persist. This could suggest that investment and consumption in Indonesia could be interest inelastic. As such, increasing interest rates may not be the most effective way to tackle inflation in Indonesia.

***Given the weakening global demand in Ext 1, any policy that reduces AD may also have severe repercussions on the Indonesia economy in terms of growth and employment.***

**[Analyse how <another policy> can tackle the cost push inflation]**

Possible policies to consider would be *provision of subsidies* or *diversification of import sources*.

The Indonesian government can consider the use of energy or fertilizer subsidies to tackle inflation. These subsidies can be given to firms to help lower their cost of production. This will increase SRAS and hence lower the general price level, tackling cost push inflation.

However, subsidies require substantial government funding and would unlikely be a sustainable long-term solution should the inflation persist. From Ext 1, we see that the Indonesian government is struggling to provide subsidies for fuel and had to raise the price of fuel so as to protect the state budget. Likewise, any consideration of the provision of subsidies will bring about stress to the state budget.

OR

One key reason why Indonesia is facing imported inflation is due to the Russian-Ukraine conflict where both parties are countries that exports commodities to Indonesia. With the conflict, there has been a shortage of wheat and fertilisers which had in turn led to high prices that has contributed to high inflation. Indonesia's continued reliance on both Russia and Ukraine and the lack of "security guarantees for food and fertilizer supplies from both countries" remains the root cause of the imported cost-push inflation. Indonesia could hence consider diversifying its sources of wheat and fertilizer imports so as to reduce the reliance on Russia and Ukraine. Given the uncertainty of the duration of the conflict, Indonesia should consider other imports sources so that she is less susceptible to price increases arising from the conflict.

However, time taken to establish new import sources can be significantly long due to the need for negotiations. Moreover, given the interconnectedness of economies, an increase in price of a commodity in an exporter country will likely cause a rise in global price. As such, diversification may not be the most effective way to tackle inflation in Indonesia.

**Evaluation**

Indonesia finds herself in a sticky situation with stagflation as a possibility given the impending slowdown and no clear signs of a fall in inflation. While raising interest rates can be effective in reducing AD to dampen prices, it can be potentially damaging in bringing the economy to a recession due to its contractionary effects. Given the significant number of increases in interest rate in a short period of time, there may be limited scope for the Indonesia's policymakers to contemplate any further increase.

In addressing the root cause of the inflation, we can infer that inflation in Indonesia is likely to be cost push inflation given the disrupted "energy supply chain" and also "rising prices of global commodities". As such, alternative policies to reducing interest rates such as subsidies and diversification would be more effective.

Diversification could be a better long-term solution for Indonesia to reduce their reliance on any few countries for their source of wheat and fertilizers as the Russia Ukraine conflict has clearly demonstrated the perils of such reliance. An even longer-term solution will be to consider ways to reduce their reliance on traditional energy sources such as coal to reduce their exposure to high energy prices.

Going forward, the Indonesia government will need to thread carefully and consider what is the best way to tackle inflation in a manner that does not implicate growth and is also cost-effective.

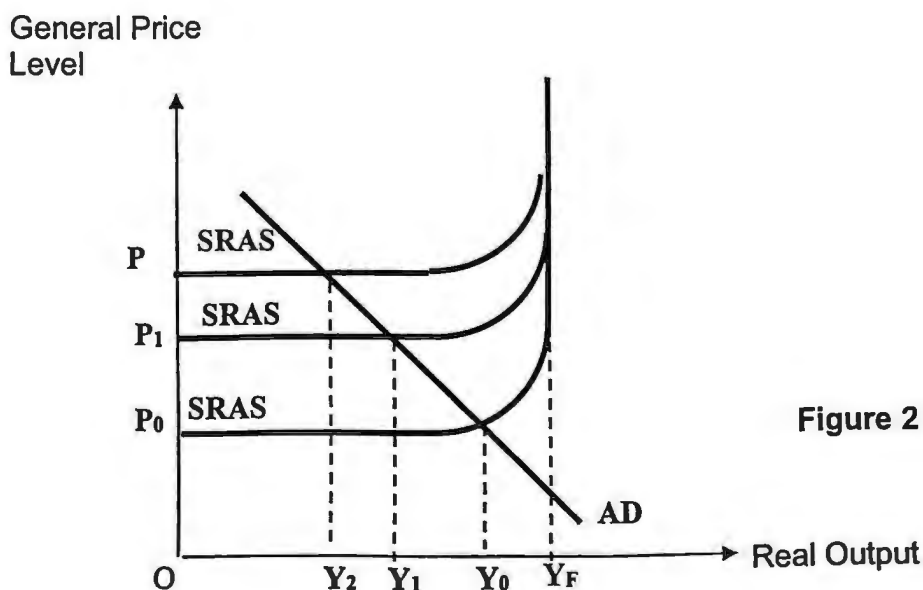
Knowledge, Understanding, Application and Analysis		
L2	For a response that considers raising of interest rates plus one other policy in tackling inflation, coupled with their limitations	4-6
L1	For a one-sided response that only considers whether raising interest rates is the best way to tackle inflation or an undeveloped discussion of 2 policies (including raising of interest rates) to tackle inflation	1-3
Evaluation		
E2	For answers that consist of at least 1 well-developed evaluation point considering the context of the Indonesian economy	2
E1	For answers that consist of an evaluative point that is explained or attempts to consider the context of the Indonesian economy	1

**(e) Discuss the possible impact of Russia-Ukraine war on Singapore's economy. [10]**

As a small and open economy, the Russia-Ukraine war will have a large impact on Singapore's economy, as Singapore will likely face higher cost-push inflation and fall in economic growth.

Impact 1: Cost push inflation

As mentioned in Extract 3, "uncertainty over energy supplies from Russia has sent oil prices soaring above US\$100 a barrel", which has "pushed up production costs". As a small and open economy who lacked natural resources, Singapore is reliant on external economies for factor inputs such as oil. An increase in price of imported inputs will lead to a significant rise in unit cost of production, causing SRAS to fall. As seen in Figure 2, the SRAS shift upwards from SRAS<sub>0</sub> to SRAS<sub>1</sub>, resulting in a higher price level of P<sub>1</sub> and a lower output level of Y<sub>1</sub>. And if SRAS continues to decrease from SRAS<sub>1</sub> to SRAS<sub>2</sub>, price level increases from P<sub>1</sub> to P<sub>2</sub> causing cost-push inflation. Thus, firms respond to an increase in cost of production by passing some of the costs to consumers in the form of higher prices as well as cutting back on production.

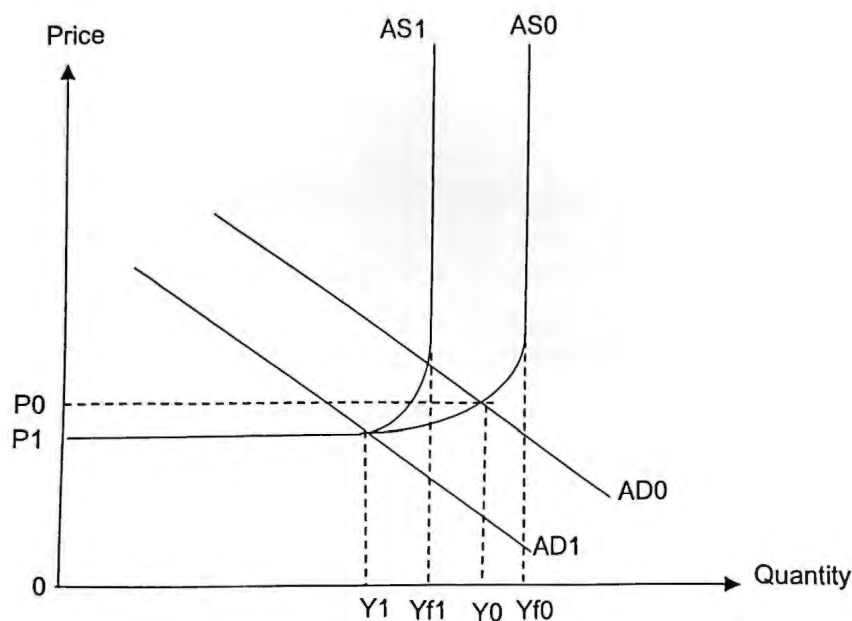




### Impact 2: Fall in Economic Growth

In addition, "Singapore's key export partners with significant exposures to Russia... may suffer income losses". With a fall in export partners' income, their purchasing power will decrease and import lesser, resulting in a fall in export revenue for Singapore. Considering how Singapore is highly reliant on exports to drive her actual economic growth, the fall in export demand from export partners will lead to a significant fall in AD.

Moreover, poor economic outlook arising from Russia Ukraine can also lead to a fall in consumption and investments. Assuming *ceteris paribus*, this will lead to a fall in C and I, which will also lead to a fall in AD.



**Figure 3**

The fall in investments will lead to lesser fixed capital formation, and this will lead to fall in quality and quantity of resources used, which will lead to a fall in potential growth, as seen from a fall in LRAS from AS0 to AS1, and full employment level  $Y_f$  falls to  $Y_{f1}$ . Taken together, the fall in actual growth and potential growth prevents sustained growth to be enjoyed.

With reference to Figure 3, the fall in AD from AD0 to AD1, will lead to an unplanned rise in inventories. Firms will then decrease their production level and hire lesser factors of production such as labour, causing a decrease in the derived demand for labour. As a result, households income will decrease and this decrease in purchasing power will result in a further fall in induced consumption of other goods and services. This will lead to further decreases in production and lesser factors of production hired resulting in another round of fall in spending, creating a reverse multiplier effect. As such, real GDP decreases by a multiple from  $Y_0$  to  $Y_1$ , resulting in lower actual growth.

### Evaluation

To evaluate, it is likely that the war will have negative impact on Singapore. However, the extent of the Russia Ukraine war on Singapore depends on the duration of the conflict. If the conflict were to continue for long, the impact on Singapore economy will



be severe, as its Singapore key trading partners will also be severely impacted by the war. However, if the war ends soon, the impact on Singapore economy will be smaller, especially when Russia is "not one of Singapore's major trading partners".

In addition, whether the Russia Ukraine war has an impact on Singapore also depends on the government policies that are in place to counter the negative effects the war creates. If the Singapore government provides subsidies to firms to reduce their cost of production, or offers policies to promote investments in Singapore, the impact the Russia Ukraine war has on Singapore's cost push inflation and growth will be reduced.

Knowledge, Understanding, Application and Analysis		
L2	For a developed discussion the impact of Russia-Ukraine war on Singapore economy.  Developed answers should include clear elaboration on how the war will move the economy further away from a range of macroeconomic goals.	4-7
L1	For an undeveloped discussion on how the war will move the economy further away from a range of macroeconomic goals	1-3
Evaluation		
E2	For answers that consist of at least 1 well-developed evaluation point and a judgement on the extent of impact the war has on Singapore	2-3
E1	For answers that consist of an evaluative point that is explained or attempted a judgment the extent of impact the war has on Singapore	1



RIVER VALLEY HIGH SCHOOL  
JC 2 Preliminary Examination  
in preparation for General Certificate of Education Advanced Level  
Higher 2

## ECONOMICS

9570/02

Paper 2 Essays

10 September 2024

2 hours 30 minutes

Additional Materials: Answer Booklet

### READ THESE INSTRUCTIONS FIRST

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.

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

Answer **each** question using **separate** answer booklets. You can ask for an additional booklet if you need more than one for a question.  
Indicate clearly the **question number**.

#### For each Answer Booklet:

Write your name, Centre number and index number on the first page of all Answer Booklets that you hand in. Write clearly and use capital letters.

For each Answer Booklet, use both sides of the paper.

Write in dark blue or black pen. HB pencil may be used for graphs and diagrams only.

**DO NOT WRITE ON ANY BARCODES.**

Do not tear out any part of the Answer Booklet. All work must be handed in. If you have used any additional booklet, please insert it inside the first Answer Booklet.



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

[Turn over

## Section A

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

- 1 Rising pork prices have led to a decrease in the number of farmers raising ducks and geese. Consequently, the price of feather shuttlecocks in China has increased by 40%. Feather shuttlecocks are typically made from 16 overlapping feathers, usually sourced from geese or ducks.
  - (a) Explain what might cause price elasticity of demand and cross elasticity of demand to vary for different products. [10]
  - (b) Discuss how rising pork prices could affect consumer expenditure on feather shuttlecocks and its related goods. [15]
  
- 2 In the early 2020s, the gym industry became more competitive, with new gyms offering advanced facilities and diverse classes. However, a surge in COVID-19 cases led some people to stay home out of fear, while gym-goers had to observe safe distancing measures at the gym.
  - (a) Explain why some firms in the gym industry may decide to remain in the market while others might choose to shut down due to Covid-19. [10]
  - (b) Discuss the potential effects that consumers are likely to experience due to the influx of competition. [15]
  
- 3 Nordic nations such as Denmark, Finland, Norway and Sweden offer access to higher education for free. Singapore chooses to lower the costs of higher education through subsidies.
  - (a) Explain two reasons why governments get involved in the education sector to achieve the objective of economic efficiency. [10]
  - (b) A 2022 research study by the National University of Singapore (NUS) described the wage premium of a university degree as substantial, more than double what those with secondary and lower education earn. This earnings gap increases over the workers' lifetimes.  
  
Discuss whether the Singapore government should continue to subsidise higher education in view of the need to balance the achievement of economic efficiency with sustainability. [15]

### Section B

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

- 4 (a) Explain why a rise in interest rates is used as a monetary policy tool to control inflation in some countries but not in Singapore. [10]
- (b) Discuss whether a rise in world interest rates would likely have a negative impact on Singapore's domestic and external economy. [15]

- 5 An economy with an ageing population can benefit from an accumulation of wealth as older individuals save for consumption in old age and invest in their education. In Singapore, the government has invested significantly in life-long initiatives to boost the country's human capital potential and reduce unemployment.

Source: World Economic Forum

- (a) Explain a possible demand-side cause for one type of unemployment and a possible supply-side cause for another type of unemployment for an economy like Singapore. [10]
- (b) Discuss whether an ageing population makes it more difficult for an economy like Singapore to achieve low unemployment. [15]

- 6 (a) Explain how comparative advantage and technological improvements help to drive globalisation. [10]
- (b) Global competitiveness can be seen from an economy's export competitiveness and its attractiveness as a foreign direct investment destination.

Discuss whether encouraging technological improvements and signing free trade agreements would be effective in influencing an economy's global competitiveness. [15]

## 2024 RVHS Prelim Essay Question 1

Rising pork prices have led to a decrease in the number of farmers raising ducks and geese. Consequently, the price of feather shuttlecocks in China has increased by 40%. Feather shuttlecocks are typically made from 16 overlapping feathers, usually sourced from geese or ducks.

- (a) Explain what might cause price elasticity of demand and cross elasticity of demand to vary for different products. [10]
- (b) Discuss how rising pork prices could affect consumer expenditure on feather shuttlecocks and its related good. [15]

### Intro:

Price elasticity of demand (PED) measures the degree of responsiveness of quantity demanded of a good to a change in its price, ceteris paribus. It is calculated by  $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}$ .

Cross elasticity of demand (XED) measures the degree of responsiveness of demand for one good to a change in the price of another good, ceteris paribus. It is calculated by  $\frac{\% \text{ change in quantity demanded of good X}}{\% \text{ change in price of good Y}}$ .

### Requirement 1: What causes PED to differ:

Price elasticity of demand (PED) is always negative due to the law of demand: a rise (fall) in price leads to a fall (rise) in quantity demanded. Therefore, only the absolute value of PED matters. The magnitude of PED varies based on factors like the availability of substitutes and the proportion of income spent on a good.

One factor that affects the magnitude of PED is the availability and closeness of substitutes, where the greater the availability of substitutes for a good and the closer the substitutes are to the good, the bigger the magnitude of the good's PED. The number and closeness of substitutes in turn, depend on how broadly we define the good. E.g., demand for 'shuttlecock' as a broad category is more price inelastic than the demand for 'feather shuttlecock'. Reason being, fewer substitutes exist for shuttlecock in general whereas more substitutes exist for feather shuttlecock. If the price of shuttlecock increases, consumers have fewer/no substitutes to switch to. In contrast, more substitutes exist for feather shuttlecock. Substitutes include synthetic shuttlecock, as well as hybrid shuttlecock. Thus, if the price of feather shuttlecocks were to increase, consumers have more substitutes to turn to, thereby making its demand less price inelastic ( $PED_{\text{feather shuttlecock}} > PED_{\text{shuttlecock}}$ ).

### Requirement 2: What causes XED between different pairs of gds to differ

Cross-price elasticity of demand (XED) varies depending on whether goods are substitutes or complements, and the closeness of their relationship. Substitutes have positive XED, while complements have negative XED.

For example, shuttlecocks and badminton rackets are strong complements (i.e.,  $XED > -1$ ), so an increase in racket prices reduces demand for shuttlecocks more than proportionately. Meanwhile, coffee and cream are weak complements, so an increase in price of coffee will lead to a less than proportionate reduction in demand for cream.



For substitutes, feather and synthetic shuttlecocks are close substitutes ( $XED > 1$ ) for casual players because both types can fulfill their needs with minimal differences in performance, so an increase in feather shuttlecock prices causes a more than proportionate rise in synthetic shuttlecock demand. However, for professional players, they are not close substitutes ( $0 < XED < 1$ ) as feather shuttlecocks provides better control, feel and sound, so the increase in demand given an increase in price of feather shuttlecocks is smaller.

Understanding these determinants helps explain variations in PED and XED across products.

Level	Knowledge, Application, Understanding, Analysis	Marks
L3	For an answer that explains how different determinants of PED and XED would affect the values of PED and XED.	8 - 10
L2	For an undeveloped answer that explains how different determinants of PED and XED would affect the values of PED and XED.  OR  For a developed answer that only explains how that explains how different determinants of PED OR XED would affect the values of PED OR XED.	5 - 7
L1	For an answer that may show little knowledge of PED and XED. Mere definition of relevant concepts or mere listing of different determinants of PED and/or XED, without looking at different products.	1 - 4

(b)

Consumer expenditure is calculated by multiplying the price consumers pay by the equilibrium quantity in the market. We can use price elasticity of demand (PED) to determine the effect of rising pork prices on consumer expenditure for feather shuttlecocks, while cross elasticity of demand (XED) helps assess the impact on related goods like synthetic shuttlecocks or badminton rackets.

Rising pork prices have prompted farmers to shift from raising ducks and geese to pigs, as these goods are in competitive supply, using similar resources. This reduces the supply of duck and goose feathers, key inputs in feather shuttlecock production. The reduced supply of feathers increases price of factor inputs, raising its cost of production, causing a fall in supply and thus a leftward shift in the supply curve for feather shuttlecocks. This leads to higher prices and lower quantity demanded.

Whether consumer expenditure increases or decreases depends on the PED of feather shuttlecocks. Professional players, who require higher quality shuttlecocks with fewer substitutes, likely exhibit  $PED < 1$ . Thus, a price increase results in a less than proportionate decrease in quantity demanded, leading to higher total consumer expenditure from  $OP_0AQ_0$  to  $OP_1CQ_1$ .

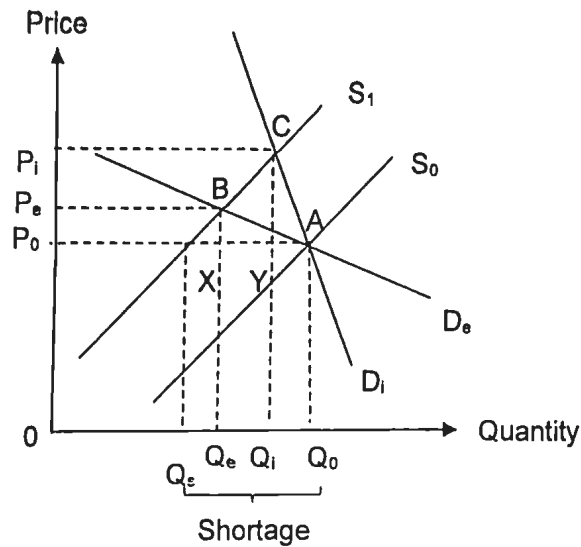


Figure 1: Fall in supply of feather shuttlecocks

Recreational badminton players, who play for leisure, likely do not have a strong preference for feather shuttlecocks and see synthetic or hybrid shuttlecocks as close substitutes. Thus, their demand for feather shuttlecocks is relatively price elastic due to the greater availability of substitutes. As shown by  $D_e$  in Figure 1, a price increase due to a supply fall leads to a more than proportionate decrease in quantity demanded, resulting in a decline in total expenditure from  $OP_0AQ_0$  to  $OP_eBQ_e$ .

#### R2: Effect on consumer expenditure for synthetic shuttlecocks [4]

Since feather and synthetic shuttlecocks are substitutes, cross elasticity of demand (XED) determines the effect on consumer expenditure for synthetic shuttlecocks. If they are weak substitutes, XED is positive but small. A price increase in feather shuttlecocks leads to a small rise in demand for synthetic shuttlecocks, resulting in a modest increase in price and quantity, and a small rise in consumer expenditure ( $OP_0AQ_0$  to  $OP_1BQ_1$ ).

If they are strong substitutes, especially for recreational players, XED is positive and large. A price increase in feather shuttlecocks significantly boosts demand for synthetic ones, leading to a larger rise in price, quantity, and consumer expenditure ( $OP_0AQ_0$  to  $OP_2CQ_2$ ).

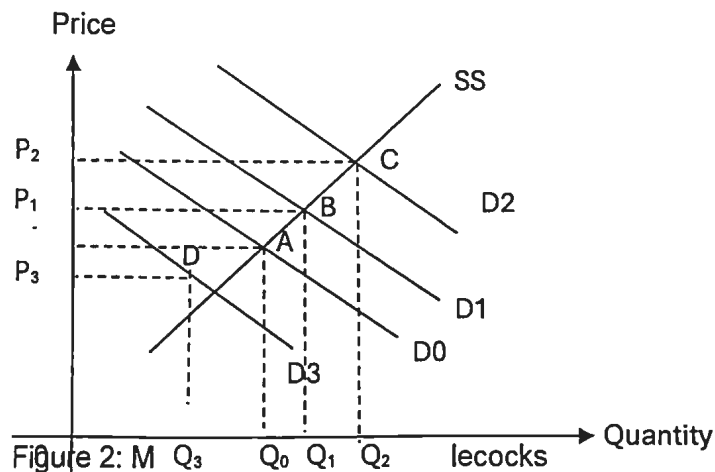


Figure 2: M lecocks

### Evaluation:

The analysis assumes *ceteris paribus*. However, factors like the growing preference for synthetic shuttlecocks and the Badminton World Federation's approval of their use in international events may cause professional players to switch, significantly reducing expenditure on feather shuttlecocks and increasing it for synthetic ones.

Additionally, the durability of badminton rackets, a complement to feather shuttlecocks, means that consumer expenditure on them may not fall significantly, despite their complementarity.

Overall, consumer expenditure on feather shuttlecocks will likely fall, synthetic shuttlecocks will rise, and badminton racket expenditure will remain relatively stable due to its durability.

### LORMS

Level	Description	Marks
L3	To enter L3, candidates are expected to discuss effect on consumer expenditure for both feather shuttlecocks and synthetic shuttlecocks/badminton rackets, using a range of elasticity concepts. A demand and supply diagram would be a useful tool of analysis.	8-10
L2	An underdeveloped explanation of effect on consumer expenditure for both feather shuttlecocks and synthetic shuttlecocks/badminton rackets, with limited use of elasticity concepts.	5-7
L1	For an answer that shows some knowledge but does not indicate that the meaning of the question has been properly grasped.  Basic errors of theory or an inadequate development of analysis may be evident.  Where the answer is mostly irrelevant and only contains a few valid points made incidentally in an irrelevant context.	1-4

E3	Analytically well-explained judgement about the effect on consumer expenditure for both feather shuttlecocks and synthetic shuttlecocks/badminton rackets, plus an overall summative conclusion.  OR  a well-explained judgment on feather shuttlecocks and an evaluative statement about the other related good, plus a summative conclusion	4-5
E2	A well-explained judgment about effect on consumer expenditure on feather shuttlecocks OR synthetic shuttlecocks/badminton rackets.  OR  2 unsupported statements on effects on consumer expenditure for both feather shuttlecocks and synthetic shuttlecocks/badminton rackets.	2-3
E1	1 unsupported statement about effect on consumer expenditure for either on feather shuttlecocks OR synthetic shuttlecocks/badminton rackets.	1

## EQ2

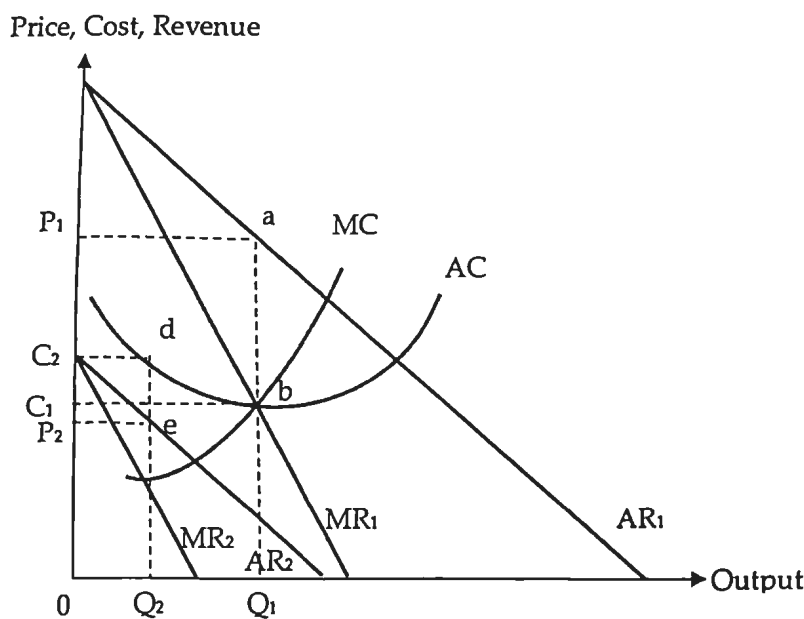
In the early 2020s, the gym industry became more competitive, with new gyms offering advanced facilities and diverse classes. However, a surge in COVID-19 cases led some people to stay home out of fear, while gym-goers had to observe safe distancing measures at the gym.

- Explain why some firms in the gym industry may decide to remain in the market while others might choose to shut down due to Covid-19. [10]
- Discuss the potential effects that consumers are likely to experience due to the influx of competition. [15]

### Part (a)

R1: Explain why some gyms might choose to continue operations despite the the Covid-19 safe distancing measures.

Figure 1: Fall in profits due to the pandemic



Due to the Covid-19 restrictions, gyms may see a fall in demand for exercising at gyms due to the restrictions and people are more cautious about exercising together. This will result in a decrease in demand for gym services and membership fees and gyms may see a fall in their AR from AR<sub>1</sub> to AR<sub>2</sub> as shown in Figure 1 above. Furthermore, there may also be a fall in income levels due to the decrease in economic output or some individuals may lose their jobs during this pandemic, resulting in a further fall in demand. Diagrammatically, the gym may earn a supernormal profit of area P<sub>1</sub>abC<sub>1</sub> at first, however with the fall in AR, the gym may now be earning a subnormal profit of C<sub>2</sub>deP<sub>2</sub>.

In the short run, a firm incurs both fixed and variable costs. Fixed cost does not vary with output produced and it is incurred even when there is no production. Such costs are payable even when a firm shuts down its operation. Examples of fixed costs for a gym include rental payments for the shop space, payments for fitness machines and fire insurance, etc. Variable cost varies with

output produced and it is not incurred by a firm when it shuts down or ceases operation. Examples of such costs include wages of gym instructors and expenses for the operations like utilities and maintenance of the equipment due to wear and tear.

In the short run, even though a gym is earning subnormal profit, but if its AR exceeds its AVC ( $AR > AVC$ ), it means that it can cover its variable cost and some of its fixed cost, it will choose to remain in operation.

This is because by continuing, the additional cost that will be incurred is AVC and not the fixed cost because fixed cost does not vary with the level of output, but nonetheless need to be paid even if it shuts down. At the same time, by continuing operation, the firm will still earn revenue from the sale of its products (TR), which can cover all of its TVC, and part of its TFC.

#### R2: Explain why some gyms might choose to shut down

If a gym like Ritual is earning subnormal profit but the gym's revenue is unable to cover its variable costs, ( $AR < AVC$ ), it will not remain in the market and should shut down.

In the short run, if the firm is unable to earn enough revenue to even cover the AVC, the firm will shut down. Should a firm choose to shut down, it will have an operating loss that is equal to its total fixed cost, which will be incurred even if output is zero.

However, if the firm chooses to remain operating, with a  $P < AVC$ , the firm will suffer even greater losses of  $AVC + AFC$ . Hence, in order to minimise losses, the firm will choose to shut down instead.

In the long run, the firm must at least make normal profit, i.e.  $AR = AC$ , to remain in the industry. If the demand fails to recover and the firm continues to make subnormal profits, then it will have to exit the industry as it is better off redeploying its resources to other industries where it might be able to at least earn a normal profit.

	Knowledge, Application/ Understanding and Analysis	
L3	Thorough knowledge of the facts and theory with an excellent ability to explain in a precise, logical and reasoned manner. Illustrations and examples are evidence of the ability to recognise the principles of the question, application to relevant current situations, and appropriateness for the question.	8-10
L2	Answer is relevant to the question, but the theory may be incompletely explained. Evidence of an ability to identify facts, at graphs (where appropriate) and applying theory to new situations.	5-7
L1	Answer shows some knowledge but does not indicate that the meaning of the question has been properly grasped. Basic errors of theory or an inadequate development of analysis may be evident.	1-4

#### Part (b)

##### R1: Positive effects experienced by consumers with the influx of competition

Before the influx of competition, the existing gym companies had relatively greater market power, allowing them to set higher prices. Each company faced a relatively high demand curve, which was also price inelastic due to the lack of close substitutes. As a result, under the profit-maximizing condition where marginal revenue equals marginal cost ( $MR = MC$ ), these companies tended to set higher prices.



However, with the influx of competition, the existing gym companies will experience a decrease in demand. Also, the demand for their services becomes more price elastic. As a result, an existing gym company will now produce less and charge a lower price.

The influx of competition not only pressures existing gym companies to lower prices but also expands the variety of services available to consumers. New entrants often differentiate themselves by offering unique amenities and experiences. This increased diversity in services enhances the overall welfare for consumers, giving them more options to choose from based on their preferences and needs.

#### R2: Negative effects experienced by consumers with the influx of competition

Before the increase in competition, each gym company produced a relatively larger share of the industry's output, allowing them to operate at a larger scale and benefit from significant internal economies of scale (IEOS). IEOS refer to cost savings that occur when a firm increases its output. For example, larger gyms often have a bargaining advantage and receive preferential treatment from suppliers. This bulk buying enables them to obtain goods at lower costs and on better terms, which in turn reduces their unit costs.

With the influx of competition, each gym company now produces a smaller output and is likely to experience less extensive internal economies of scale (IEOS), leading to higher average and marginal costs. Consequently, consumers face higher prices and a lower level of output.

Furthermore, with the rise in average cost due to the influx of competition, the supernormal profits previously enjoyed by an existing gym company. These supernormal profits are typically used to fund research and development (R&D) activities and they are often costly and require substantial funding. As a result, with reduced profits, these companies now have less ability to invest in R&D and drive product innovation. In the long run, the reduced investment in product innovation could lead to a decrease in the variety and quality of services available to consumers compared to what they might have experienced in a less competitive industry.

#### Summative conclusion

While increased competition in the gym industry offers substantial benefits to consumers, including lower prices, better service quality, and greater variety, these benefits can be tempered by market conditions and the financial health of the gyms. The ability of gyms to maintain high service standards and continue innovating may be compromised by the financial pressures of a highly competitive market. Thus, while consumers may enjoy immediate advantages, the long-term sustainability of these benefits depends on the equilibrium between competition and the financial viability of the gyms.

Knowledge, Application/ Understanding and Analysis		
L3	Thorough knowledge of the facts and theory with an excellent ability to explain in a precise, logical and reasoned manner. Illustrations and examples are evidence of the ability to recognise the principles of the question, application to relevant current situations, and appropriateness for the question.	8-10
L2	Answer is relevant to the question, but the theory may be incompletely explained. Evidence of an ability to identify facts, at graphs (where appropriate) and applying theory to new situations.	5-7
L1	Answer shows some knowledge but does not indicate that the meaning of the question has been properly grasped. Basic errors of theory or an inadequate development of analysis may be evident.	1-4

E3	Builds on appropriate analysis to evaluate contemporary issues, perspectives and policy choices, that recognises unstated assumptions and evaluates their relevance, synthesises economic arguments to arrive at well-reasoned judgements and decisions.	5
E2	Some attempt at evaluation or a conclusion that answers the question but does not explain the judgement or base it on analysis.	3-4
E1	Superficial evaluative statement(s) without supporting analysis and elaboration.	1-2

### EQ3

Nordic nations such as Denmark, Finland, Norway and Sweden offer access to higher education for free. Singapore chooses to lower the costs of higher education through subsidies.

(a) Explain two reasons why governments get involved in the education sector to achieve the objective of economic efficiency. [10]

(b) A 2022 research study by the National University of Singapore (NUS) described the wage premium of a university degree as substantial, more than double what those with secondary and lower education earn. This earnings gap increases over the workers' lifetimes.

Discuss whether the Singapore government should continue to subsidise higher education in view of the need to balance the achievement of economic efficiency with sustainability. [15]

(a) Explain two reasons why governments get involved in the education sector to achieve the objective of economic efficiency. [10]

#### Introduction:

Governments intervene in the market for education to achieve the microeconomic objective of efficiency especially allocative efficiency. This is because the unregulated free market fails to allocate resources which maximises societal welfare due to two primary reasons: positive externalities and imperfect information.

#### Main:

R1: positive externalities in the market for education

Positive externalities are beneficial side effects of production or consumption on persons other than the consumers and the producers themselves. These third parties do not make payment to enjoy the external benefits. In the context of education, consumers only consider the marginal private benefit (MPB) of an additional unit of education in terms of their higher earning potential in the future. Yet, third parties such as co-workers enjoy marginal external benefit (MEB) such as guidance from those who consumed more education and this could improve the formers' workplace productivity and positively impact their wages.

Since marginal social benefit ( $MSB = MPB + MEB$ ), the presence of positive externalities causes MSB to exceed MPB. Assuming no negative externalities, then marginal social cost ( $MSC$ ) = marginal private cost ( $MPC$ ). The MPC refers to the cost of providing an additional unit of education incurred by the education providers such as hiring of teachers, facilities and materials. With reference to Figure 1, the socially optimal level of output is at  $Q_s$ , where  $MSB = MSC$  and societal welfare is maximised. However, consumers and producers only consider their own private benefits and costs and disregard the benefit to external parties, hence the free market output is  $Q_m$  where  $MPB = MPC$ . Since  $Q_m < Q_s$ , the under-consumption/production of education and resultant allocative inefficiency is reflected in the deadweight loss to society shown by area ABC.

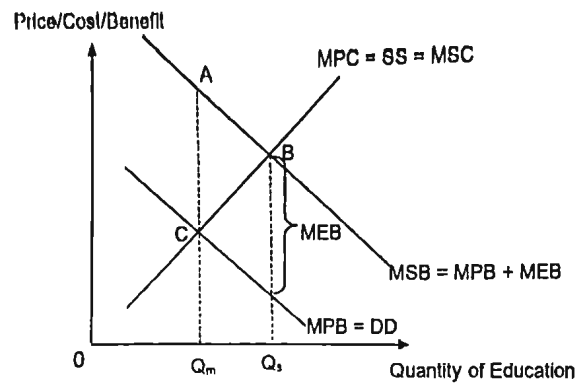


Figure 1: Under-consumption/production due to positive externalities

R2: information failure in the market for education

Consumers might also under-consume education due to information failure or imperfect information. Due to ignorance, individuals may not accurately estimate the longer-term marginal private benefits of consuming an addition unit of education such as future job prospects and earning potential. As such, they underestimate the private benefits of consuming education, causing the misperceived MPB to be lower than the actual MPB (or MSB) as seen in Figure 2.

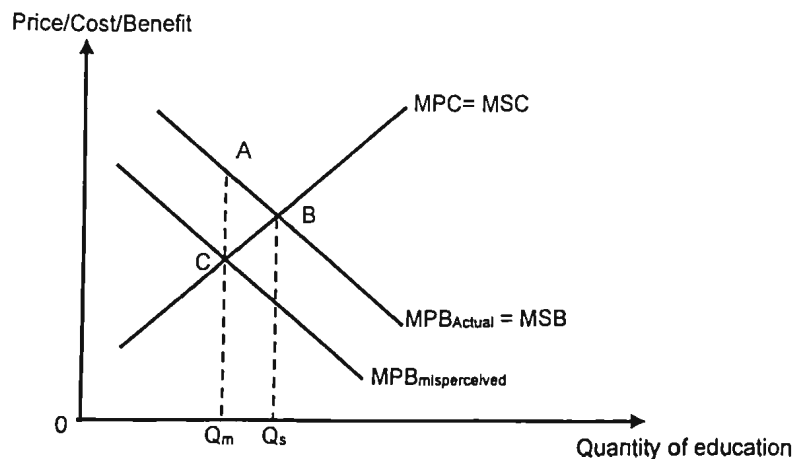


Figure 2: Under-consumption due to imperfect information

The market output is  $Q_m$ , given by the intersection of  $MPB_{misperceived}$  and  $MPC$ , whereas the socially optimal level of output is  $Q_s$ , where  $MSB=MSC$ . Since  $Q_m < Q_s$ , there is under-consumption of education due to imperfect information. The deadweight loss due to under-consumption is shown by area ABC and this allocative inefficiency results in market failure for which governments might intervene in the market for education.

LORM

	Knowledge, Application/ Understanding and Analysis	
L3	Thorough knowledge of the facts and theory with an excellent ability to explain in a precise, logical and reasoned manner the 2 most appropriate sources of market failure. Illustrations and examples are evidence of the ability to recognise and apply to relevant context.	8-10

L2	Answer is relevant to the question, but the theory of the 2 sources of market failure may be incompletely explained. Evidence of an ability to identify facts, at diagrammatic analysis and applying theory to relevant context.	5-7
L1	Answer shows some knowledge of market failure but does not indicate that the meaning of the question has been properly grasped. Basic errors of theory or an inadequate development of analysis may be evident.	1-4

(b)

Introduction:

Similar to the analysis seen in part (a), there is under-allocation of resources in the market for higher education in Singapore (Sg) due to positive externalities and imperfect information. However, the extent of market failure in higher education differs from that in basic education and this calls for a re-examination how and how much the Sg government should intervene.

Main:

R1: The Sg government should continue to subsidise higher education (to achieve AE)

To correct the under-consumption/production and achieve greater economic efficiency, the Sg government provides subsidies to the producers of higher education such as the universities. This reduces the cost of production for the universities and increases the supply of higher education. With reference to Figure 3, when the amount of subsidies provided is equivalent to the value of the MEB, the MPC will be lowered to  $MPC + \text{subsidy}$ . The new market output occurs at  $Q_m'$  (where  $MPB = MPC + \text{subsidy}$ ) now coincides with the socially optimal level of output  $Q_s$ . Hence, subsidies should continue to be given as the lower fees make higher education more affordable and the increase in consumption from  $Q_m$  to  $Q_s$  helps to correct the under-allocation of resources, eliminate the deadweight loss and achieve allocative efficiency.

However, it is difficult for the Sg government to accurately determine the optimal amount of subsidies due to the difficulty in quantifying the MEB derived from the consumption of education by the society. Any over- or under-estimation of MEB will still result in over- or under-consumption of higher education and allocative efficiency is still not achieved. In worst case scenario of government failure, this might lead to substantial wastages of resources leading to an even greater welfare loss than without government intervention.

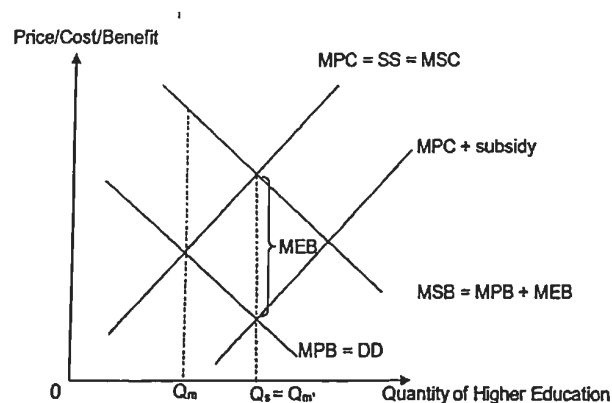


Figure 3: Subsidies in a market with positive externalities

R2: The Sg government should reduce the subsidies to higher education (to achieve sustainability)

Continuing to subsidise higher education by the Sg government to improve efficiency could mean a trade-off in terms of fiscal sustainability. Fiscal sustainability refers to the ability of a government to manage its expenditures and revenues over the long term such that future generations are not burdened with excessive borrowings and unsustainable debt. To continue with government subsidies in higher education would incur opportunity costs in other areas such as the increasing need for healthcare and infrastructure facilities in preparation to meet the needs of a rapidly ageing population. Such government expenditures can only be fiscally sustainable if they can be financed through an increase in revenues from taxation such as the Goods and Services Tax (GST), otherwise, the government fiscal position will worsen or even run into budget deficits.

However, any reduction in subsidies to higher education will have a negative impact on foreign direct investment (FDI). In a small, resource-scarce economy, foreign firms do not target the domestic market. Instead, they use Sg as a base to build capacity to serve customers in larger overseas markets which require more high-skilled workers. This involves specialised and high-skilled roles that require advanced expertise in sectors including investment banking, wealth management, data science, cyber security, artificial intelligence, and professional services such as consulting and law. Hence, reducing subsidies in higher education results in a talent deficit that deters FDI and this in turn reduces AD and real NY by a multiple which results in lower actual EG. In addition, potential EG is also compromised with a decrease in the quality of human capital and productive capacity. Taken together, all these have an adverse impact on the fiscal sustainability since government revenues e.g. in either personal or corporate income taxes will be lower.

#### LORM

	Knowledge, Application/ Understanding and Analysis	
L3	Thorough knowledge of the facts and theory with an excellent ability to explain in a precise, logical and reasoned manner the reasons for and against continuing subsidies. Illustrations and examples are evidence of the ability to recognise and apply to the context of higher education, efficiency and sustainability.	8-10
L2	Answer is relevant to the question, but the reasons for and against continuing subsidies may be incompletely explained. Evidence of an ability to identify facts, at diagrammatic analysis and applying theory to relevant context.	5-7
L1	Answer shows some knowledge of subsidies in correcting market failure but does not indicate that the meaning of the question has been properly grasped. Basic errors of theory or an inadequate development of analysis may be evident.	1-4

E3	Builds on appropriate analysis to evaluate contemporary issues, perspectives and policy choices, that recognises unstated assumptions and evaluates their relevance, synthesises economic arguments to arrive at well-reasoned judgements and decisions.	5
E2	Some attempt at evaluation or a conclusion that answers the question but does not explain the judgement or base it on analysis.	3-4
E1	Superficial evaluative statement(s) without supporting analysis and elaboration.	1-2



#### EQ4

(a) Explain why a rise in interest rates is used as a monetary policy tool to control inflation in some countries but not in Singapore. [10]

(b) Discuss whether a rise in world interest rates would likely have a negative impact on Singapore's domestic and external economy. [15]

**Suggested answer part (a)**

**Introduction:**

- The nature and size of an economy determines the appropriateness of a rise in interest rates as a monetary policy tool to control inflation.

**Body:**

**R1: Why a rise in interest rates is used to control inflation in some countries**

- Central banks that increase interest rates as a monetary policy tool to control inflation tend to be economies with a relatively large domestic demand such as the USA.
- $\uparrow$  interest rates increase the cost of borrowing, discouraging the consumption of big-ticket interest-sensitive item such as cars. A higher interest rate increases the reward to savings. This raises the opportunity cost of consumption and encourages saving. Consumption expenditure (C) falls.
- $\uparrow$  interest rates discourage firms from borrowing. And if the rate of interest exceeds the expected rate of return on investment, this means that previously viable projects become unviable leading to a fall in investment expenditure (I).
- Fall in C and I  $\rightarrow \downarrow AD \rightarrow \downarrow GPL$

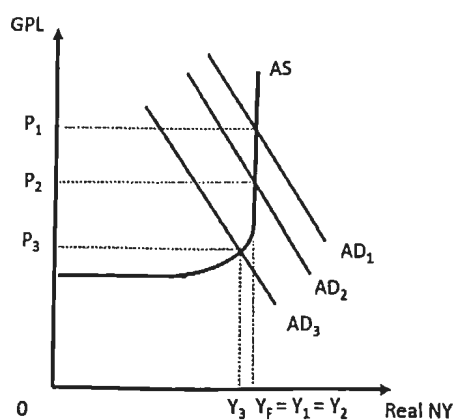


Figure 1

**R2: Why interest rates are not used to control inflation in Singapore**

[High degree of openness to capital flows]

- Singapore's status as a global financial centre and openness to capital flows means she is unable to effectively manipulate interest rates and is an interest rate taker. If Singapore were to increase its interest rate relative to global interest rates, this will attract how money from abroad into Singapore  $\rightarrow \uparrow$  domestic money supply and the supply of loanable funds  $\rightarrow \downarrow$  interest rates, returning interest rates to its initial level, making it difficult for Singapore's central bank – the Monetary Authority of Singapore (MAS) to manage interest rates.

[Small domestic capital market, high proportion of FDI]

- Singapore's small domestic capital market means a large proportion of investment expenditure is accounted by foreign direct investments (FDI). Marginal efficiency of planned investment (MEI) is interest inelastic.
- FDIs have the option of either drawing from their past profits or borrow in their own foreign home country where their company is headquartered and therefore are less reliant on borrowing from Singapore's banking institutions.
- A rise in interest rates leads to a less than proportionate fall in quantity of planned investment and thus AD may not fall by the extent intended and thus not be able to control for inflation, assuming Singapore's economy is operating on the intermediate range of the AS curve.

**Conclusion:**

- In economies with a large domestic demand, a rise in interest rates will influence the spending decisions of households and therefore control inflation.
- Unlike most other countries, Singapore's choice of the exchange rate to control for inflation is predicated on her economy's small size and its high degree of openness to trade and capital flows.

Level	Descriptor	Marks
L3	<p>For an answer that applies relevant economic concepts with a consistent link to context.</p> <ul style="list-style-type: none"> <li>• Considered why economies with large domestic demand <math>\uparrow i/r</math> to control for inflation</li> <li>• Considered why Singapore rejects the use of interest rates</li> <li>• Excellent AD-AS analysis</li> </ul> <p>Well-referenced and well-labelled diagram.</p>	8 - 10
L2	<p>For an answer that applies relevant economic concepts with some link to context.</p> <ul style="list-style-type: none"> <li>• Some consideration why economies with large domestic demand <math>\uparrow i/r</math> to control for inflation.</li> <li>• Some consideration why Singapore rejects the use of interest rates</li> <li>• Diagram may not be well-labelled or well-referenced to.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• Well-explained one-sided answer</li> </ul>	5 - 7
L1	For an answer that shows some knowledge on the choice of policy tools of different central banks.	1 - 4

**(b) Discuss whether a rise in world interest rates would likely have a negative impact on Singapore's domestic and external economy. [15]**

From (a), Singapore's nature as a global financial centre open to capital flows lead her to be an interest-rate taker. Hence, a rise in world interest rates will ultimately translate to a rise in interest rates in Singapore. This has implications on the domestic economy through impacts on consumption (C) and investment (I); and the external economy through the impact on net exports (X-M).

### R1: Impact on Singapore's domestic economy (C & I)

As explained in part (a), a rise in interest rates will lead to a fall in consumption and investment expenditure.

Taken together, the rise in interest rates causes a fall in C and I, translating to a fall in AD. If the economy is currently operating at full employment ( $Y_F$ ), the economy benefits in the form of a lowered risk of demand-pull inflation. Referring to Figure 1, suppose the initial equilibrium is at  $P_0$  and  $Y_0$ . In this case, when AD falls from  $AD_0$  to  $AD_1$ , there will be an unplanned increase in inventories at the original price  $P_0$ . Firms will reduce production and hire less factors of production such as labour. With more resources now available, firms will be able to get their resources at lower unit cost, thereby translating to reduced inflationary pressures. As reflected in Figure 1, there will be a fall in general price level (GPL) from  $P_0$  to  $P_1$ .

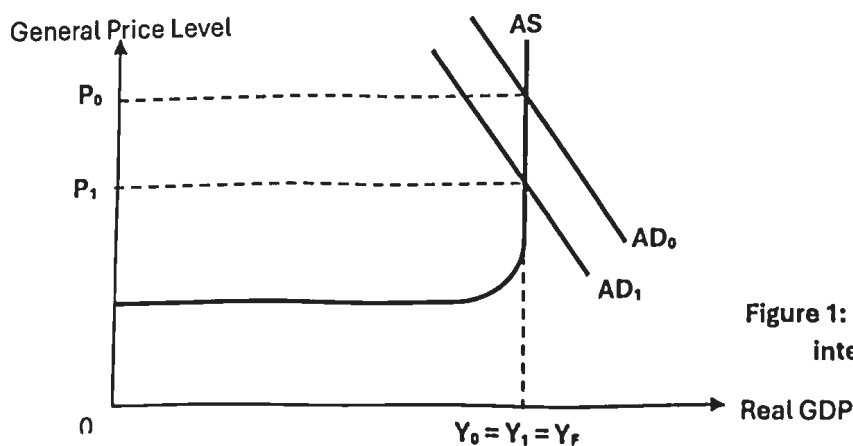


Figure 1: Impact of increase in interest rate on AD

On the other hand, if the economy is below full employment, i.e. at the Keynesian range, a fall in AD from  $AD_0$  to  $AD_1$  will bring about a negative impact to the domestic economy due to the fall in real GDP from  $Y_0$  to  $Y_1$ . This will bring about increased cyclical unemployment and lead to more labour which is not used. Another negative impact to the domestic economy is the opportunity cost of the unused labour that could have been tapped on to generate economic growth.

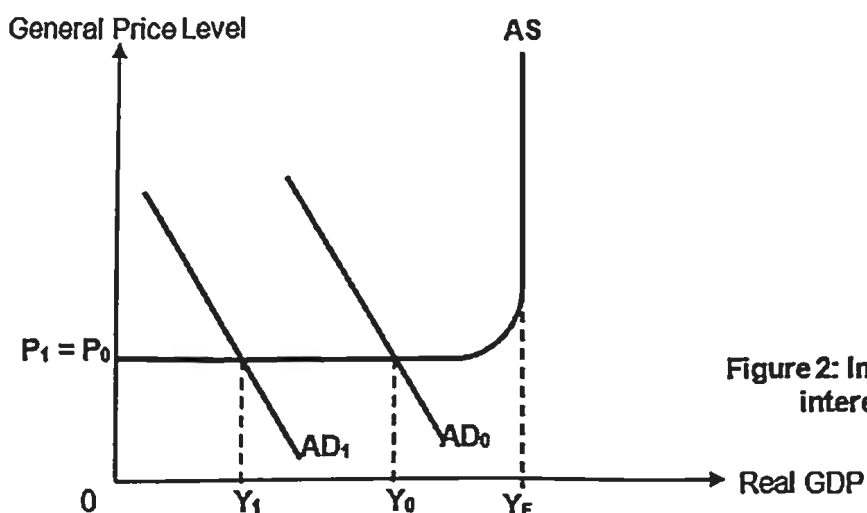


Figure 2: Impact of increase in interest rate on AD

A fall in investment expenditure could lead to a fall in the economy's productive capacity. This could lead to negative implications in the future when AD picks up again and there is not enough spare capacity in the economy to absorb the inflationary pressure.

Overall, as explained in (a), given that C and I takes up a relatively smaller proportion of Singapore's GDP, the rise in world interest rates is likely to have a negligible and insignificant impact on the domestic economy.

#### R2: Impact on Singapore's external economy (X-M)

When world interest rates increase, there may be a 'window period' where Singapore's interest rate has not risen to the same level yet, due to time lag. In this interim period, the rise in world interest rates may positively affect Singapore's net exports (X-M). Reason being, during this time where Singapore's interest rate appears to be relatively lower than that of the world, hot money will flow out of Singapore to the rest of the world. This translates to a rise in supply of Singdollar in the forex market, causing the Singdollar to weaken. Consequently, exports (X) from Singapore will be cheaper in terms of foreign currency while imports (M) into Singapore will be more expensive in Singdollars. Assuming the Marshall-Lerner conditions holds (i.e.,  $PED_X + PED_M > 1$ ), Singapore may see a rise in net exports (X-M) and positively impact the external economy.

However, such a situation will not last because as explained in (a), there will ultimately lead to an equalisation of interest rates in Singapore with that of the world due to Singapore being an interest rate taker. When that happens, hot money flows will revert back to the economy which will strengthen the value of the Singdollar. (X-M) will fall, thereby translating to a fall in AD as explained above. If the economy was initially operating at the Keynesian range where there is plenty of spare capacity as seen in figure 2, a fall in aggregate demand will lead to a contraction of the economy and lead to increased cyclical unemployment. The impact on the external economy would hence likely be negative.

Additionally, a rise in interest rates in other countries would also likely reduce their real GDP as in the case for Singapore. With a lowering of real GDP, households are likely to experience lower disposable income. Given that import is a function of income, foreigners would be less able to purchase goods and services from Singapore and this will lead to a fall in demand for exports and hence a fall in export revenue. A fall in X will reduce AD and in turn reduce real GDP by a multiple via the reverse multiplier effect. Given that X takes up a relatively larger proportion of Singapore's GDP, the fall in X will have a larger negative impact on Singapore's external economy

#### Synthesis:

*Whether a rise in world interest rates will likely have a negative impact on the domestic and external economy would depend on where the initial equilibrium is. It is also more likely for interest rates to have a greater impact on the Singapore's economy through its impact on exchange rates given the nature of Singapore's open and trade reliant economy.*

*Secondly, the extent of change and the duration of the rise in world interest rates was not specified. A larger extent of change in interest rates may bring about a more significant impact compared to*

*a smaller change. This also depends on whether other policies have also been adopted in tandem to reinforce or counter-act the effects of the rise in interest rates.*

Level	Descriptor	Marks
L3	For an answer that gives a detailed and analytic explanation that: <ul style="list-style-type: none"> <li>• Considers the positive and negative impact on both the domestic and external economy</li> <li>• Excellent AD-AS analysis to analyse the impact of higher interest rates on the components of C, I and NX</li> <li>• Well-referenced and well-labelled diagram</li> </ul>	8 - 10
L2	For an underdeveloped answer that attempts to explain, with gaps, on the likely negative or positive impact on the domestic and external economy. Diagrammatic reference, if relevant, is incomplete. <ul style="list-style-type: none"> <li>• Analysis for domestic economy will entail that of the impact on consumption and investment expenditure</li> <li>• Analysis for external economy will entail that of the impact on export and import expenditure</li> </ul> OR For an answer that gives a detailed and analytic one-sided explanation on the likely impact on the domestic or external economy.	5 - 7
L1	For an answer that shows some knowledge on the impact of a rise in interest rates on the economy	1 - 4

E3	Analytically well-reasoned judgement about the overall impact of a rise in world interest rates on the domestic and external economy	5
E2	Some attempt at a judgement of the overall impact of rise in interest rates by considering factors that would have a bearing on the impact on the economy	3-4
E1	Unsupported statement about the overall impact of a rise in interest rates on the economy	1-2



EQ5

Suggested pointers

- a) Explain a possible demand-side cause for one type of unemployment and a possible supply-side cause for another type of unemployment for an economy like Singapore. [10]

An economy like Singapore is likely to face two types of unemployment – cyclical and structural.

Requirement 1: Demand-side cause for cyclical unemployment

Singapore is likely to suffer from cyclical unemployment due to insufficient aggregate demand (AD). As Singapore has a small domestic market, she is reliant on exports for growth. Any fall in external demand would cause a fall in her export revenue (X) and since X comprises more than 100% of her GDP, it will result in a significant fall in AD, ceteris paribus.

As AD falls, firms face unplanned rise in inventories and will reduce production by hiring less factors of production, including labour, thus paying out less factor income. Households who receive less factor income will decrease induced consumption on domestically produced goods and services, leading to a further decrease in AD. This leads to further unplanned rise in inventories, where firms reduce production again, thus reducing factor income and real NY. This process continues until there is no more decrease in induced consumption. Hence, the initial decrease in AD triggers a multiple decrease in real NY from  $Y_0$  to  $Y_1$  as seen in Fig. 1 below. This fall in real output is accompanied by a fall in derived demand for labour, thus causing a rise in cyclical (demand-deficient) unemployment, especially in export-related sectors.

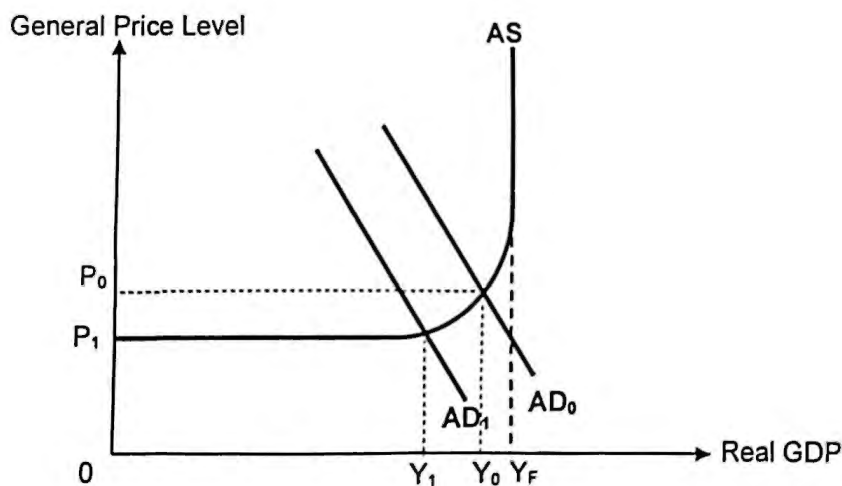


Fig. 1

Requirement 2: Supply-side cause for structural unemployment

In recent years, Singapore has been facing structural unemployment due to the restructuring of her economy. This restructuring of the economy occurs as part of the government's efforts to shift the economy towards productivity-driven growth, thus hastening skills obsolescence. For example, as Singapore undergoes rapid digital transformation in her move to become a smart nation, various industries have adopted innovative technologies to transform their work processes. Firms in the hotel/ F&B industries, for instance, are experimenting with digital



concierges and robot waiters to enhance productivity. As these labour-saving technological advancements allow for the same level of output to be produced with fewer workers, workers are increasingly displaced by machineries.

Workers in these jobs who are less proficient in handling the more advanced equipment may become unemployed. At the same time, these retrenched workers lack the necessary skills that are in demand (e.g. AI/ data solutions) to take on new jobs. Thus, structural unemployment results because of the mismatch of skills of the unemployed and the existing job vacancies.

Level	Description	Marks
L3	<p>To enter L3, candidates are expected to provide an accurate and developed explanation of:</p> <ul style="list-style-type: none"> <li>• A possible demand-side cause for one type of unemployment (cyclical/structural)</li> <li>• A possible supply-side cause for another type of unemployment(cyclical/structural) for an economy like Singapore</li> </ul> <p>using a relevant tool of analysis such as AD-AS diagram</p>	8-10
L2	<p>There should be an accurate but undeveloped explanation of:</p> <ul style="list-style-type: none"> <li>• A possible demand-side cause for one type of unemployment (cyclical/structural)</li> <li>• A possible supply-side cause for another type of unemployment(cyclical/structural) for an economy like Singapore</li> </ul>	5-7
L1	<ul style="list-style-type: none"> <li>• For an answer that shows some knowledge but does not indicate that the meaning of the question has been properly grasped.</li> <li>• Basic errors of theory or an inadequate development of analysis may be evident.</li> <li>• Where the answer is mostly irrelevant and only contains a few valid points made incidentally in an irrelevant context.</li> </ul>	1-4

- b) Discuss whether an ageing population makes it more difficult for an economy like Singapore to achieve low unemployment. [15]

Requirement 1: Ageing population makes it difficult for an economy like Singapore to achieve low unemployment

An ageing population, coupled with falling birth rates in Singapore, imply a fall in our working age population. As the number of new entrants to the workforce cannot adequately replace those who are retiring, the result is a shrinking resident labour force. This fall in labour supply relative to demand for labour causes equilibrium wage to rise in the labour market. This is because firms need to compete more intensely when hiring workers (e.g. offer higher wages), especially those in labour-intensive sectors such as food services and retail. Alternatively, if firms need to supplement their manpower count with foreign workers or tap on machines to maintain the same level of production, these add to costs in the short run too. Assume the rise in cost of production exceeds any rise in productivity, unit cost of production increases. Referring to Figure 2, the increase in unit cost of production causes a fall in short run aggregate supply (SRAS), which leads  $SRAS_0$  to shift upwards to  $SRAS_1$ . Assuming no change in aggregate demand (AD), general price level (GPL) rises from  $P_0$  to  $P_1$  while national income falls from  $Y_0$  to  $Y_1$ . As less goods and services are being produced, this will reduce the derived demand for labour, leading to an increase in cyclical unemployment.

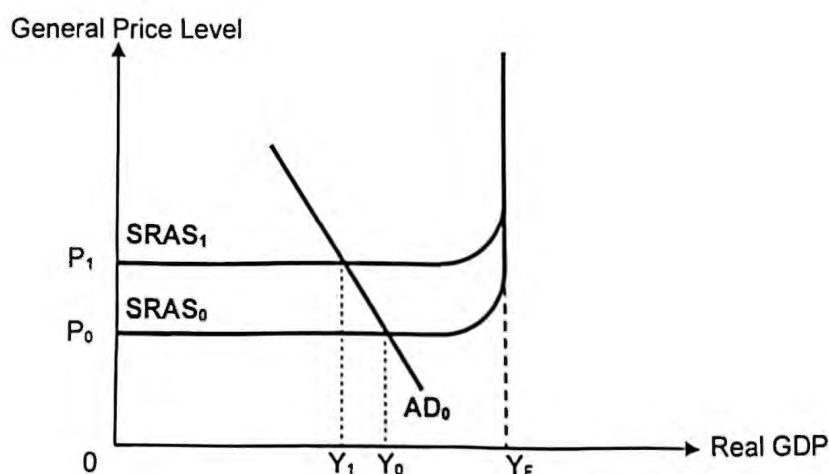


Fig. 2

Besides SRAS, the shrinking resident labour force also affects AD. Specifically, multi-national corporations (MNCs) may be deterred from entering Singapore. Reason being, it is tougher to get the necessary manpower so higher costs of hiring need to be incurred. This diminishes our attractiveness as a foreign direct investment (FDI) destination and MNCs may turn to regional countries (e.g. Malaysia) with greater availability of labour/ other resources. Reduced entry of MNCs may translate to reduction in investment (I), since MNCs usually enter Singapore and set up production plants. Failing which, AD falls. Referring to Figure 3,  $AD_0$  shifts left to  $AD_1$ . As national income falls by a multiple from  $Y_0$  to  $Y_1$ , less goods and services are being produced. Hence, firms hire fewer factor inputs such as labour, leading to an increase in cyclical unemployment.

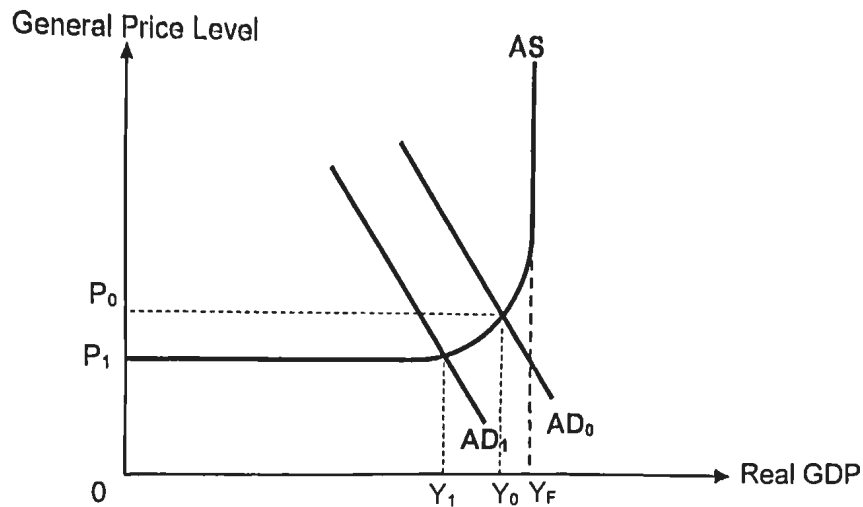


Fig. 3

With an ageing population, economies like Singapore will also undertake policies to support I in R&D and the adoption of new technology to increase productivity in order to increase the productive capacity of the country. Those lowly skilled elderly workers who have been displaced by technology may not have the relevant skills to take up jobs in the new industries. Adoption of new technology could have the unintended consequence of increasing structural unemployment.

#### Requirement 2: Ageing population does not make it difficult to achieve low unemployment

As stated in the preamble, individuals have invested in education which means they are likely to have taken up training to build up their skills. At the same time, the government have invested significantly in life-long initiatives to boost country's human capital potential like the Workfare Skills Support Scheme, which encourages low wage Singaporean workers to attend training to improve their skills. All these will help workers, including the older individuals, to increase their skills and raise their productivity. As such, all workers are less likely to remain structurally unemployed for a long period of time and will have less difficulty taking on jobs in new industries or will have picked up the skills needed to operate the new technologies in their area of work. This reduces structural unemployment.

If the ageing population has accumulated wealth as mentioned in the question, these older individuals have the means to spend on goods and services especially on healthcare services, thus increasing (C). In addition, with the government investing significantly in life-long initiatives, this will increase government expenditure (G). Together, the increase in C and G will lead to an increase in AD from  $AD_1$  to  $AD_0$  in Figure 3, resulting in a multiple increase in national income via the multiplier effect. With more goods and services being produced, this leads to an increase in derived demand for labour, thus reducing cyclical unemployment.

#### Summative Conclusion

While it is possible that ageing population can make it difficult for an economy like Singapore to achieve low unemployment, a lot also depends on the culture of the country and the policies that the government adopts. If citizens are used to saving enough for old age and are willing to engage in lifelong learning, quality of labour need not fall with an ageing population, especially with the government investing heavily in initiatives to boost human capital potential. If this is the case, ageing population will not make it difficult for an economy to achieve low unemployment.

Level	Description	Marks
L3	<p>To enter L3, candidates are expected to</p> <ul style="list-style-type: none"> <li>• Explain how an ageing population makes it difficult for an economy like Singapore to achieve low unemployment (cyclical/structural)</li> <li>• Explain how an ageing population does not make it difficult to achieve low unemployment (structural /cyclical)</li> </ul>	8-10
L2	<p>There should be an accurate but undeveloped explanation of:</p> <ul style="list-style-type: none"> <li>• Explain how an ageing population makes it difficult for an economy like Singapore to achieve low unemployment (cyclical/structural)</li> <li>• Explain how an ageing population does not make it difficult for an economy like Singapore to achieve low unemployment (structural /cyclical)</li> </ul>	5-7
L1	<ul style="list-style-type: none"> <li>• For an answer that shows some knowledge but does not indicate that the meaning of the question has been properly grasped.</li> <li>• Basic errors of theory or an inadequate development of analysis may be evident.</li> <li>• Where the answer is mostly irrelevant and only contains a few valid points made incidentally in an irrelevant context.</li> </ul>	1-4

E3	<p>2 analytically well-explained evaluation pointers on how an ageing population makes it more or less difficult for an economy like Singapore to achieve low unemployment, plus an overall summative conclusion.</p> <p>OR</p> <p>A well-explained evaluation pointer and an unexplained evaluate statement on how an ageing population makes it more or less difficult for an economy like Singapore to achieve low unemployment, plus a summative conclusion</p>	4-5
E2	A well-explained judgment OR 2 unsupported statements on how an ageing population makes it more or less difficult for an economy like Singapore to achieve low unemployment.	2-3
E1	1 unsupported statement on how an ageing population makes it more or less difficult for an economy like Singapore to achieve low unemployment.	1



**2024 J2H2 Prelims EQ6 (Macro) – Answer for Other JCs**

- (a) Explain how comparative advantage and technological improvements help to drive globalisation. [10]  
 (b) Global competitiveness can be seen from an economy's export competitiveness and its attractiveness as a foreign direct investment destination.

Discuss whether encouraging technological improvements and signing free trade agreements would be effective in influencing an economy's global competitiveness. [15]

**Mark Scheme (a)**

	Knowledge, Application/ Understanding and Analysis	
<b>L3</b>	Developed explanation of how the exploitation of comparative advantage (CA) and technological improvements drive globalisation. To enter L3, candidates should:  - support their explanation with relevant economic analysis (e.g., PPC diagram) - consider all three aspects of globalisation i.e., trade, capital, labour.	<b>8-10</b>
<b>L2</b>	Answer is relevant to the question. However, the explanation for R1 and R2 is undeveloped OR developed explanation for R1 <u>or</u> R2 only. Some ability at graphs.	<b>5-7</b>
<b>L1</b>	Answer shows some knowledge but lacks economic analysis + limited coverage of the three aspects of globalisation.	<b>1-4</b>

**Mark Scheme (b)**

	Knowledge, Application/ Understanding and Analysis	
<b>L3</b>	Developed discussion of how signing FTAs <u>and</u> encouraging tech improvements influence an economy's global competitiveness. (Optional to use e.g. from SG context) 'Developed' – Uses appropriate analysis to explain how the measure addresses the 2 aspects of global competitiveness. This should be followed by limitations of each measure.	<b>8-10</b>
<b>L2</b>	Undeveloped discussion of how signing FTAs and encouraging tech improvements works OR developed explanation for 1 measure only.  'Undeveloped' – Explanation lacks economic analysis.	<b>5-7</b>
<b>L1</b>	Answer shows some knowledge but does not show proper grasp of the question. Basic errors of theory or an inadequate development of analysis may be evident.	<b>1-4</b>

<b>E3</b>	Builds on appropriate analysis to evaluate contemporary issues, perspectives & policy choices, that recognizes unstated assumptions and evaluates their relevance, synthesizes economic arguments to arrive at well-reasoned judgements & decisions. [E.g., weighs the relative effectiveness of each measure/ provides policy recommendation, suggests other complementary measures to improve global competitiveness.]	<b>5</b>
<b>E2</b>	Some attempt at evaluation or a conclusion that answers the question but does not explain the judgement or base it on analysis.	<b>3-4</b>
<b>E1</b>	Superficial evaluative statement(s) w/o supporting analysis & elaboration.	<b>1-2</b>

## Part (a)

### INTRO

- Define globalisation as the closer closer integration of economies and people of the world through the ease of movement of goods and services, capital and labour across borders.
- Acknowledge that technological improvements and the exploitation of comparative advantage are two key drivers of globalisation.

### DEVT

#### Requirement 1: How exploitation of comparative advantage drives globalisation

- Highlight that countries engage in trade with each other because they hope to gain the benefits that come with trading based on the theory of comparative advantage.
- Explain what is theory of comparative advantage and how specialisation and trading based on a country's comparative advantage can benefit economies by increasing the amount of goods and services available for consumption.
- Use the production possibilities curve to explain how two countries can gain if they trade with each other.
- Provide assumptions – countries use all their available resources and how even if one country has absolute advantage, there are still gains from trading.
- Explain how a country with comparative advantage in producing one of the good will have a relatively gentler production possibilities curve and thus, she should specialise in production of this good.
- Explain that if countries specialise and then proceed to trade according the set terms of trade, this will lead to both countries being able to enjoy higher consumption levels compared to before trade.

#### Requirement 2: How technological improvements drive globalisation

- Explain how major technological improvements in transport (e.g., the development of container shipping and the proliferation of air travel) can lead to increased flows of trade, labour and capital.
- E.g., with the advent of cheaper air travel and shipping charges, we see more countries engage in trade with each other compared to before.
- Besides improvements in transport, technological improvements can also be seen in area of communications (e.g., the rise of the Internet) which has been facilitated by increasing digitalisation in many economic processes and activities (e.g., the development of mobile computing through devices like laptops and smart phones, and the rise of big data, cloud computing and artificial intelligence).
- E.g., with the rise of the Internet, we see more e-commerce transactions now being undertaken by more people.
- Besides trade in goods and services, we also see the above technological improvements in transport and communications translate to more businesses taking place across borders, and also more people being willing to take up employment opportunities across borders.
- To attain the 'Analytical' level for this requirement, students would need to link the technological improvements to increased flows of trade in goods and services, capital and labour.



## CONCLUSION

- Recognise that besides technological improvements and exploitation of comparative advantage, another key driver of globalisation is the development of multilateral (e.g., World Trade Organisation) and bilateral (e.g., Free Trade Agreements FTAs) economic cooperation, which enabled trade, investments and migration barriers to be reduced over time.

## Part (b)

### INTRO

- Highlight that the two measures cited in the question:
  - Encouraging technological improvements
  - Signing Free Trade Agreements (FTAs)
- will affect an economy's export competitiveness (price and non-price) and also its ability to attract foreign direct investment.
- Note that it is optional for students to provide examples on Singapore context for this question.

### DEVT

#### Requirement 1: How encouraging technological improvements can affect global competitiveness

- Explain what 'encouraging technological improvements' entail. Specifically, in the Singapore context, when the government provides the Productivity and Solutions Grant (PSG) to encourage firms to tap on technology, this may be one way to achieve this.
- Alternatively, the government may choose to devote funds towards improving technology and research & development in the country.
- Provide examples on how the above can lead to firms enjoying a consequent rise in productivity. This may in turn lead to more price competitive exports.
- Alternatively, it may bring about the development of new and more innovative products. If so, then it will lead to more competitive exports in the non-price aspect.
- In addition, explain how the above measures may also provide an investment-friendly environment. This thereby serves to attract foreign multinational corporations (MNCs) to enter the domestic country to invest and set up plants.
- If so, this also improves the country's global competitiveness in this respect.
- Provide real world examples to substantiate the above point.
- Qualify that despite the above positive impact on an economy's global competitiveness, there are limitations nonetheless.
- Examples of limitations include the long time lag required for the above policies to materialise. In addition, the success is not guaranteed and there may also be opportunity cost incurred when the government chooses to put her money into these uses.

## Requirement 2: How signing of free trade agreements can affect global competitiveness

- Define free trade agreements (FTAs) as legally binding agreement between two or more countries to reduce and eliminate barriers to trade and facilitate the cross border movement of goods and services between the countries who signed it.
  - Explain what 'signing FTAs' entail. Specifically, in the Singapore context, when the government signs FTAs with another country, this will bring about benefits to domestic firms and investors.
  - Highlight that signing FTAs lead to an opening up of export markets and this enables domestic firms to now export to a wider consumer base.
  - Consequently, this translates to increased scale of production and in turn brings about economies of scale. If the lower average cost leads to lower prices of exports, this also helps to improve the price competitiveness of exports.
  - Alternatively, the presence of the FTAs may allow firms in the domestic country to access cheaper imports of raw materials.
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- Besides having a positive impact on export price competitiveness, students should highlight that usually, FTAs cover more than trade.
  - As they may also allow for freer mobility of investment, there needs to be explicit link to how this may in turn bring about improvement in global competitiveness as the domestic country will be able to attract more foreign direct investment following the negotiation of the FTA.
  - Provide real world examples of the above.
  - Elaborate on some possible limitations that can result from the signing of FTAs.

### Note to markers:

- Students can link their explanation for R1 or R2 to the impact on AD and/ or SRAS.
- When doing this, they must show in their diagrams how the consequent rise in exports (X) or investment (I) may lead to a rise in aggregate demand (AD) and in turn, a multiple rise in national income (NY).
- Alternatively, if there is a fall in cost of production brought about from having access to cheaper imports, this can be represented by a rise in short run aggregate supply (SRAS).
- This in turn translates to fall in general price level (GPL) and rise in national income (NY).
- The above diagrams are, however, optional. If students can provide a detailed verbal explanation with good link to global competitiveness, it is acceptable too.