



CATHOLIC JUNIOR COLLEGE
JC2 Preliminary Examinations
Higher 2

ECONOMICS

9757/01

Paper 1

25 August 2021

No Additional Materials are required.

2 hours 15 minutes

READ THESE INSTRUCTIONS FIRST

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

Answer **ALL** questions.

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

This document consists of 7 printed pages and 1 blank page

Answer all questions

Question 1

The True Cost of Beauty Products

Table 1: Cost of Beauty around the World in 2019

Region	Asia - Pacific Region		North America Region	
	China	Malaysia	USA	Canada
Price of a foreign cosmetic product bundle (USD)	427.00	263.32	244.43	240.06

Note: Price of a foreign cosmetic product bundle refers to sum of the prices of the following products: Chanel No. 5 Eau De Parfum; M.A.C Cosmetics Retro Matte Lipstick; Estée Lauder Double Wear Stay-in-Place Makeup SPF10; Anastasia Beverly Hills DipBrow Pomade; and NARS Sheer Glow Foundation.

Source: *Retail In Asia*, 15 January 2021

Extract 1: Major Players in China's Cosmetic Industry

Presently, cosmetics have become an indispensable feature of the modern lifestyle of individuals. In addition, growth in consciousness about external beauty along with an individual's internal intellect has become one of the major driving factors for use of cosmetics in the global market. The global cosmetics market size was valued at \$380.2 billion in 2019, and is projected to reach \$463.5 billion by 2027. Based on region, Asia-Pacific, followed by North America, contributed to the highest share in 2019, holding more than one-third of the global cosmetics market, and will maintain its lead position by 2027.

Global cosmetic brands employ various strategies, such as new product launches to increase their customer bases and expand their operating areas across various countries, with the aim to further gain revenue and cost advantages. In China, foreign brands dominate the cosmetics market in China while domestic brands are catching up quickly. The competition of brands selling cosmetics in China is tightening as more domestic brands gain market share through rapid development of quality and innovation to match the dominant foreign brands. The Chinese government has played a role in the rise of the domestic cosmetics market. For foreign cosmetics brands that want to enter China's market, it is necessary to apply for safety certifications. Furthermore, taxes on imported goods are continuously adjusted and it is important for them to know the information of taxation as this can affect costs and revenue significantly.

Adapted from *Allied Market Research*, February 2021 and *Daxue Consulting*, 3 January 2020

Extract 2: The Ugly Face of Cosmetics

Mica is a natural-occurring silicate mineral dust often found in the mining grounds of India. The presence of Mica is especially prominent in cosmetics products, as it gives off a youthful and softer look when applied by reflecting light away from any wrinkles or lines in the skin. Since Mica is a natural mineral, it is safe to be used on majority skin types with little to no side effects. Therefore, it is well-loved by organic and natural beauty brands.

However, not all-natural ingredients come from a sustainable supply chain, especially Mica. While the Mica industry is worth over billions, the eastern rural states of India, where Mica is commonly found, is suffering without a voice. The majority of the Mica industry is linked to child labour and illegal mines in the rural states of India where there is less growth, democracy, and development. A cycle of poverty has resulted in children, as young as four, resorting to mining Mica illegally in hazardous conditions for money, although it only pays 30 rupees (S\$0.56) per day. Take the supply chain as a funnel. At every stage of the supply chain, any illegitimate activities or content is possibly filtered and concealed to continue the trade. No one but the operators of each stage of the supply chain will know what goes into the ingredients and the products.

Now the next question is: is Mica safe for the environment? In general, mining is an invasive process that damages far more than the mining site itself. The creation of open pits induces soil erosion, the formation of sinkholes, and could potentially contaminate surface water, groundwater, and soil. The mining also leads to deforestation, with trees gradually cleared to develop more land for mining Mica. As such, this extends to a loss of biodiversity. For instance, residents in Bangakhla village observed a decrease in spotting elephants, wild boars, rare birds in the village.

Beauty brands need to confront the true cost of their decisions. To ensure that responsible sourcing practices are happening, they might have to be legislated for, and organisations will need to build the cost of compliance into their value chains and improve transparency. While it is impossible to go Mica-free, synthetic Mica is said to offer the same or better benefits as natural Mica without harming the environment. This is the first step to gradually reduce the high global demand for natural Mica and correct misinformation about the superiority of natural Mica over synthetic alternatives. Beauty brands, like Lush, have removed all traces of natural Mica from their supply chains over child labour concerns and switched over to synthetic Mica. In addition, L'Oréal has also committed itself to source sustainable Mica in India. By supporting beauty brands with a traceable supply chain, we are telling the suppliers that we want Mica from sustainable sources.

Source: *The Sustainability Project*, 27 September 2020

Extract 3: The Responsible Mica Initiative (RMI)

In 2019, India exported more than US\$37 million (S\$49 million) worth of Mica powder. The region and the Mica industry, however, does not have a mechanism to incentivise the adoption of workplace and labour standards or to prevent illegally mined Mica from entering the global Mica supply chain. There is a need for government enforcement of laws and regulations to provide enforceable oversight of the industry.

The Responsible Mica Initiative (RMI) is a global coalition for action – putting policy into practice – comprised of multiple organizations committed to establishing a fair, responsible and sustainable Mica supply chain in the states of Jharkhand and Bihar in India that will eliminate unacceptable working conditions and eradicate child labour by 2022.

The RMI consists of:

1. **Mica Supply Chain Mapping and Workplace Standards for Mica Collection and Processing** – RMI members must map the source of Mica in their products to exporters, processors and mines in India. Each member's supply chain participant must then adopt workplace standards that encompass environmental, health, safety, legal and fair labour practices that include a prohibition on the use of child labour.
2. **Community Empowerment in Villages that Provide the Mica Workforce** – This programme helps to transform these communities in the Mica region with initiatives that provide long-term and self-sustainable remedies to the underlying causes of child labour and poor working conditions. Villages that provide the workforce for Mica mines and processors are empowered to access improved educational resources for children, better nutrition and health care, provision of training and resources to learn or improve skills. These support alternative means of livelihood, such as farming to reduce economic dependency on Mica.
3. **Legal Frameworks for the Mica Sector** – RMI encourages the creation of laws and regulations to establish a responsible and sustainable Mica supply chain. RMI works collaboratively with various stakeholders including, local Mica businesses, various government agencies, and sector experts. A multi-stakeholder approach was chosen to ensure that components of a legal framework would protect the rights of workers and prohibit child labour.

Adapted from *Channel News Asia*, 22 May 2021 and <https://responsible-mica-initiative.com/>, accessed on 29 June 2021

Questions

- (a) (i) Using Table 1, compare the price of a foreign cosmetic product bundle across the stated countries. [2]
- (ii) With reference to the given data, explain whether price discrimination could be the reason behind the observed price differences. [5]
- (b) Using a relevant elasticity concept, explain how the imposition of import taxes on foreign cosmetics in China may affect the revenue of domestic cosmetic brands. [3]
- (c) Explain the economic relationship between cosmetic products and natural Mica. [2]
- (d) Discuss how far the misallocation of resources in the natural Mica market in India is a result of firms not building "cost of compliance into their value chains". [8]
- (e) Discuss whether the measures proposed by the Responsible Mica Initiative (RMI) are likely to be better than other government policies in achieving economic efficiency in the global market for natural Mica. [10]

[Total: 30]

Question 2

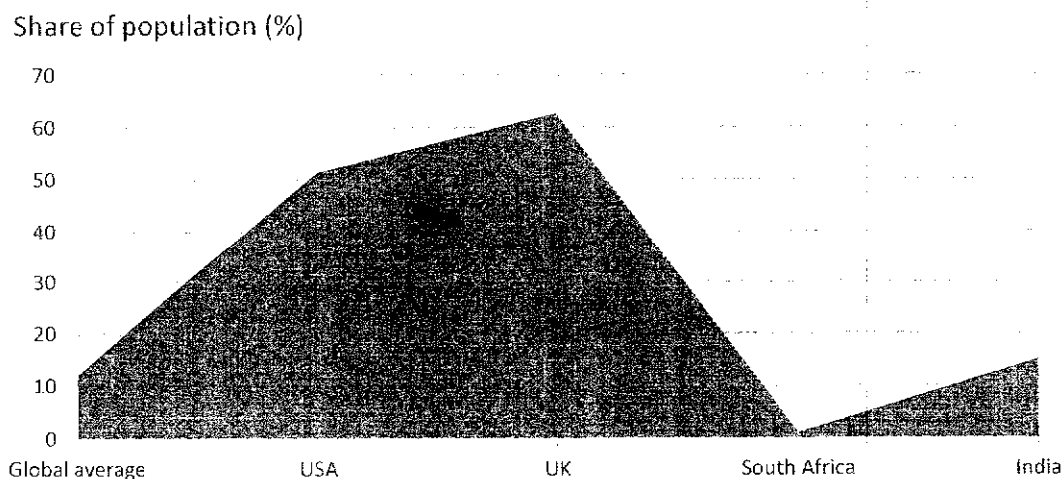
Government Responses to the COVID-19 Pandemic Around the World

Extract 4: Global Economic Outlook during the Covid-19 Pandemic

The COVID-19 pandemic has claimed more than 3.2 million lives worldwide since it first emerged in late 2019 due to its highly infectious nature. Every region is subject to substantial growth downgrades. There will be economic headwinds on various economies: pressure on health care systems, loss of trade and tourism, dwindling remittances, subdued capital flows, and tight financial conditions amid mounting debt. Even this bleak outlook is subject to great uncertainty and significant downside risks. Should COVID-19 outbreaks persist, economic inactivity will be prolonged, the recession could be deeper. Businesses might find it hard to service debt, heightened risk aversion could lead to climbing borrowing costs, and bankruptcies and government defaults could result in financial crises in many countries. Advanced economies are projected to shrink 7 percent in nominal terms but 4.5 percent in real terms. That weakness will spill over to the outlook for developing economies, who are forecast to contract by 2.5 percent in nominal terms as they cope with their own domestic outbreaks of the virus. This would represent the weakest showing by this group of economies in at least sixty years.

Source: The World Bank, 2021

Figure 1: Share of Population who has at least received one dose of COVID-19 vaccine in developed and developing countries (as of June 2021)



Source: Fortune, 2021

Extract 5: Pandemic in Singapore – An Opportunity or Challenge?

Singapore is a country that has long had the reputation as a safe haven for foreign investors. A few factors, such as economic stability, political stability, well-regulated property markets, and the success in attracting foreign investment, have earned the country the status as a sanctuary even during unprecedented economic events. Currently, Singapore has brought its local virus situation under control and is on a gradual recovery path. However, external demand and the reopening of international borders remain key to growth despite domestic demand recovery being much stronger than expected. Singapore's central bank continues to keep monetary policy settings at zero percent change per annum due to a benign inflation outlook and global economic uncertainties caused by the pandemic.

Due to the growing regional concerns over the economic impact brought by the COVID-19 outbreak, a record jump in money flowing into Singapore bank accounts from abroad continues to underline the country's safe haven appeal during the COVID-19 pandemic and political uncertainty in rival financial centre Hong Kong. Deposits have risen in all but one month over the past year, a period marked by escalating political unrest in Hong Kong, a Sino-US trade row and the outbreak of the coronavirus pandemic. The pandemic and pressure on regional currencies had also fed fears of a currency crisis and capital flight. The Monetary Authority of Singapore said in a statement that since mid-2019, there has been a broad-based increase of inflows into Singapore. "These flows have become more volatile in recent months due to the COVID-19 pandemic and resulting market fluctuations," the central bank said.

Source: Various

Extract 6: Asia's responses to COVID-19

In the face of this disquieting outlook, the immediate priority for policymakers is to address the health crisis and contain the short-term economic damage. Over the longer term, authorities need to undertake comprehensive reform programs to improve the fundamental drivers of economic growth once the crisis lifts.

In terms of policy response to the pandemic, Asian governments have introduced various economic stimulus packages. Common measures are tax incentives/breaks for affected businesses, particularly for those in the most hard-hit sector; subsidies, such as cash assistance and discounts on electricity bills, to households and workers, including additional incentives for those in the healthcare sector; deferred tax or loan payments; and exemptions from or lower government fees and charges. Central banks have also lowered policy rates and reserve requirements, and bought government securities/bonds. Some countries have introduced distinct measures targeting key sectors of society. For example, Brunei allowed the deferment of contributions to the trust/pension funds, while Malaysia allowed reduced pension contributions. Meanwhile in Vietnam, the banking sector created a credit package worth VND285 trillion (USD12.3 billion) for businesses.

However, efforts to contain COVID-19 in emerging and developing economies, including low-income economies with limited health care capacity, could precipitate deeper and longer recessions—exacerbating a multi-decade trend of slowing potential growth and productivity growth.

Source: Association of Southeast Asian Nations, 2021

Extract 7: Greater urgency to produce 30% of Singapore's nutritional needs locally by 2030

With global panic buying, some countries moving towards food protectionism and more nations going into lockdown during the coronavirus pandemic, food security has been thrust into the spotlight. Singapore, which saw several bouts of panic buying after the move to orange in the Disease Outbreak Response System Condition alert last month, is working closely with six nations to tackle disruptions to trade and supply chains that could impede the delivery of vital goods, including food and medicine. In his Resilience Budget speech last Thursday, Deputy Prime Minister Heng Swee Keat reassured Singaporeans that there is an "adequate supply of safe food" and the Government is "strengthening our food resilience for the long term".

One way is through the "30 by 30" goal to produce 30 per cent of Singapore's nutritional needs locally - a figure that currently stands at less than 10 per cent - by 2030. On the importance of local production, an official spokesman tells *The Sunday Times*: "It helps mitigate our reliance on imports and serves as a buffer during supply disruptions to import sources, which contributes to our food security." The "30 by 30" vision requires the agri-food industry to transform into one that is "highly productive and employs climate-resilient and sustainable technologies that will enable us to overcome our land, water, energy and manpower constraints", adds the spokesman.

Source: *The Straits Times*, 29 March 2020

Questions

- (a) (i) With reference to Figure 1, compare the share of vaccinations across the given countries. [2]
- (ii) With reference to Extract 4, explain one internal and one external factor contributing to greater risk of "government defaults" in various countries. [4]
- (b) Explain how the data given in Extract 4 can be used to project inflation rates in advanced economies. [2]
- (c) With reference to Extract 7, comment on whether Singapore should raise domestic production of food and reduce import of food. [4]
- (d) Discuss whether the government should be concerned with a "record jump in money flowing into Singapore bank accounts from abroad"? [8]
- (e) Assess whether Singapore is in a better position to recover from the economic effects of COVID-19 than the other Asian economies. [10]

[Total: 30]

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Question 1

The True Cost of Beauty Products

Answers

(a)	(i)	<p>Using Table 1, compare the price of a foreign cosmetic product bundle across the stated countries. [2]</p> <p>Differences by region</p> <ul style="list-style-type: none"> The prices in the Asia-Pacific region (China and Malaysia) are higher as compared to the North-America region (USA and Canada). [1] <p>Difference by country</p> <ul style="list-style-type: none"> Table 1 reflects that the price of foreign cosmetic products bundle is highest in China amongst the listed countries, while Canada's is the lowest. [1] 	
	(ii)	<p>With reference to the given data, explain whether price discrimination could be the reason behind the observed price differences. [5]</p> <p>Introduction - Definition of price discrimination Price discrimination occurs when a producer sells the same commodity to different buyers at different prices, for reasons not associated with differences in cost, with the aim of increasing profits.</p> <p>Thesis: Price discrimination is the reason behind observed price difference [3]</p> <p>No cost differences</p> <ul style="list-style-type: none"> Given that the marginal cost of producing the cosmetics for various countries should be constant – identical cosmetics products (not taking into account shipping costs), the price of foreign cosmetics in China is still observed to be higher than other countries (from Table 1), suggesting that there is price discrimination <p>Differences in PED across countries [1] + Determinant [1]</p> <ul style="list-style-type: none"> In extract 1, there is information implying that Chinese consumers deem foreign brands as better in quality and more innovative as compared to Chinese domestic brands, which are considered as poorer substitutes. This means that the demand for foreign cosmetics in China is relatively more price inelastic ($PED < 1$), which may not be the case for other countries. <p>Linkage to TR and price difference [1]</p>	

	<ul style="list-style-type: none"> Hence, profit motivated foreign cosmetic producers charge different prices (3rd degree price discrimination) to increase their total revenue, with costs unchanged. In China, a higher price charged would cause a less than proportionate fall in Qd, allowing TR to rise, ceteris paribus, thereby increasing profits. In other countries (Malaysia, USA, Canada), where the demand for foreign cosmetics may be relatively more price elastic (PED > 1) due to greater availability of substitutes, a lower price charged to other countries would cause a more than proportionate rise in Qd, TR increases ceteris paribus, thus increasing profits. <p>Anti-Thesis: Price discrimination is not the reason behind observed price difference. [2]</p> <p>Cost differences [1]</p> <ul style="list-style-type: none"> However, Extract 1 also points out that prices could be higher in China due to <i>reasons associated with costs</i> as the Chinese government has been “<i>imposing taxes on imported goods</i>”. (Students may also point to the “<i>higher costs associated with safety certifications</i>”) <p>Linkage to price difference [1]</p> <ul style="list-style-type: none"> The imposition of import taxes raise the <i>marginal costs of production</i> of foreign cosmetic products. As such, the profit motivated foreign cosmetic producers will pass on the higher costs to the consumers, resulting in higher prices as a reflection of higher costs. <p>Alternative answer accepted for anti-thesis</p> <ul style="list-style-type: none"> There could have been differences in demand between China and the other countries. With reference to extract 1, “In China, foreign brands dominate the cosmetic market in China”. The demand for foreign cosmetics in China could be higher than other countries like Canada due to changing taste and preferences. [1] This results in relatively higher prices in China. [1] 	
(b)	<p>Using a relevant elasticity concept, explain how the imposition of import taxes on foreign cosmetic brands in China may affect the revenue of domestic cosmetic brands.</p> <p>Clarify how import tax works</p> <ul style="list-style-type: none"> The imposition of import taxes would raise prices of foreign cosmetics. <p>Infer the positive XED value using evidence [1]</p> <ul style="list-style-type: none"> It was evidenced in Extract 1 that “<i>domestic brands are catching up quickly with foreign brands</i>”, indicating that Chinese and foreign cosmetics are substitutes. 	[3]

	<ul style="list-style-type: none"> • Substitutes: $XED > 0$ • Close substitutes: $XED > 1$ <p>Explain the substitution effect [1]</p> <ul style="list-style-type: none"> • Imposition of import taxes raises prices of foreign cosmetics, which causes a fall in quantity demanded of foreign cosmetics, while causing Chinese consumers to switch from relatively more expensive foreign cosmetics to local cosmetics. • Demand for domestic cosmetics rises (1m) <p>Impact on domestic producer revenue [1]</p> <ul style="list-style-type: none"> • DD for domestic cosmetics rise Equilibrium P and Q rise. • Total revenue rise (1m). <p><u>Accept alternative answer using PED</u></p> <p>Answers analyzing PED of domestic cosmetics are not accepted. However answers analyzing PED of foreign cosmetics are accepted.</p> <ul style="list-style-type: none"> • PED of foreign cosmetics > 1 due to close substitutes with domestic cosmetics, and so with the import tax, price of foreign cosmetics rise while Qd of foreign cosmetics falls more than proportionately [1] • DD of domestic cosmetic rise more than proportionately [1] • TR rise [1] 	
(c)	<p>Identify and explain the economic relationship between cosmetic products and natural Mica. [2]</p> <p>Identify economic relationship: [1]</p> <ul style="list-style-type: none"> • Natural Mica is a factor input/resource used in production of cosmetic products. • Natural Mica derives its demand from changes in demand in the cosmetic product market. <p>Explain the economic relationship: [1]</p> <ul style="list-style-type: none"> • [Demand] Rise in global demand and output of cosmetics results in a rise in derived demand for natural mica. or • [Supply] Rise in price of mica, would increase cost of production of cosmetic products and lead to a fall in supply of cosmetic products 	

(d)

Discuss how far the misallocation of resources in the natural mica market in India is a result of firms not building “cost of compliance into their value chains”.

[8]

Introduction

Clarify cost of compliance as the consideration of true costs in the production process, as inferred from Extract 2.

Clarify misallocation of resources in this context would be an over allocation of resources.

Thesis: Lack of “cost of compliance” results in over allocation of resources, thereby resulting in market failure

Presence of Externalities causing resource misallocation

- Profit-maximizing firms will not internalize the negative externalities as part of private costs. Presence of MEC causes a divergence between MPC and MSC, where MSC is higher than MPC at all levels of production
- Production of natural mica causing environmental impacts, affecting third parties such as residents in the village living near to the mica mining sites (Extract 2)

Unethical cost cutting measures worsening resource allocation

- Firms engaging in unethical cost cutting measures (e.g. severely underpaid labour and exploiting child labour to further reduce MPC in Extract 2), worsening the divergence between MPC and MSC.

Market Failure Diagram Analysis

- With reference to Figure 1, the free market output (Q_e) maximizes self-interest ($MPB=MPC$) while socially optimal output (Q_s) maximizes society welfare ($MSB=MSC$). Free market output Q_e is higher than Q_s , indicating an overproduction of natural Mica, contributing to a society deadweight loss
- Since factoring in cost of compliance results in higher private costs for the firms. These firms will continue not to do so.

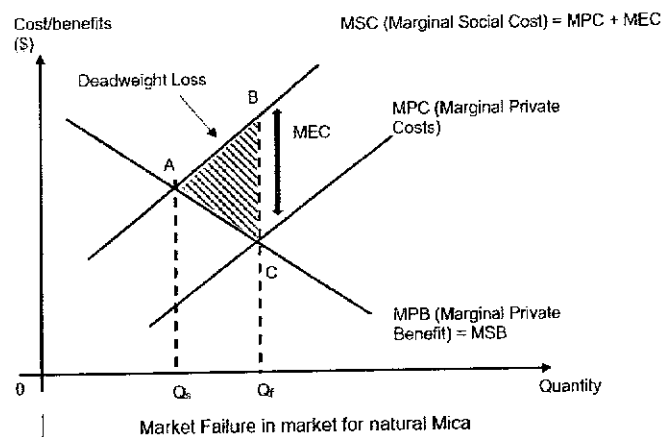


Figure 1

Accept alternative interpretation of negative production externalities

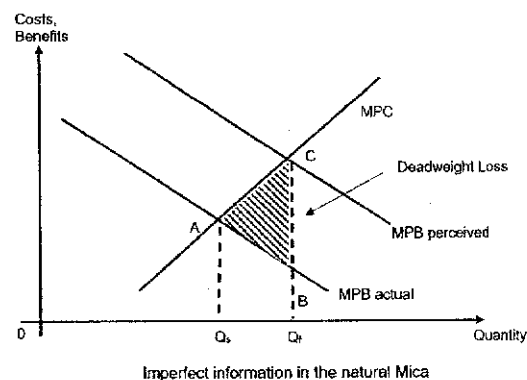
- Production of natural mica using child labour (Extract 2) resulting in negative externalities, as children, deprived from education, may reduce the productivity level of the country in the future.

Anti-thesis: Lack of “cost of compliance” is not the reason behind misallocation of resources. Other reasons may explain the misallocation of resources, such as imperfect information.

Producers belief in superiority of natural mica over synthetic mica (perceived vs actual private benefits)

- Extract 2 mentioned the presence of synthetic Mica as a substitute to natural Mica. It is suggested that synthetic Mica could yield similar benefits as natural Mica. Producers' belief in the superiority of natural mica over synthetic mica in the supply chain causes overestimation of the perceived private benefit. This is due to lack of information about the synthetic alternatives.
- With reference to Figure 2, the perceived MPB is higher than actual MPB due to imperfect information. Under perfect information and assuming no externalities, Q_s ($MPB_a = MPC$) would maximize both self-interest and society welfare. Under imperfect information, output reduces to Q_f ($MPB_p = MPC$), causing an over allocation of resources.
- Evaluation: However, Extract 2 also pointed out that beauty brands like Lush have switched over to synthetic Mica, suggesting an increased awareness of the actual private benefits towards using natural Mica in the production of cosmetics.

Figure 2



Accept alternative interpretation of imperfect information

- Producers' belief in natural mica superiority over synthetic mica drives imperfect information about the perceived private costs on the

		<p>perceived MPC is lower than actual MPC of using natural Mica, causing over consumption</p> <ul style="list-style-type: none"> • Consumers' belief in the superiority of natural mica based cosmetic products over synthetic mica based cosmetic products, drives imperfect information, causing an overconsumption. The imperfect information can be expressed either as $MPB_p > MPB_a$ OR $MPC_p < MPC_a$ • Asymmetric info causing adverse selection is accepted only if students can identify the two different goods which are of different quality. For example, consumers might see sustainably sourced products as better quality as compared to unsustainably sourced ones. The answers must then prove that the information superiority in producers results in lower returns to the consumers, who have inferior information. Moral hazard is irrelevant in this context and is not accepted. <p>Conclusion</p> <ul style="list-style-type: none"> • Largely, lack of "building in cost of compliance into the value chain" is the main reason behind the misallocation rather than other reasons. • Fueled by the profits, producers will tend to find ways to maximize their gains in any given industry. Due to the unregulated business-operating environment in the Mica supply chain (evidence in Extract 3), there are no penalties for unethical practices, allowing these firms to continue to reduce costs as a way to enhance their profits. Hence these firms continue to operate without factoring in "costs of compliance". <p>Mark Scheme</p> <table border="1" data-bbox="384 1317 1305 1758"> <thead> <tr> <th>Lvls</th> <th>Descriptors</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>Two-sided argument with good use of evidence. Strong economic analysis.</td> <td>4-6</td> </tr> <tr> <td></td> <td> <ul style="list-style-type: none"> • Max 5 marks - for good two sided answers without link to cost of compliance • Max 4 marks - one sided (T or AT) with link to cost of compliance </td> <td></td> </tr> <tr> <td>1</td> <td>One-sided argument with little/no use of evidence. Weak or underdeveloped economic analysis, with some errors.</td> <td>1-3</td> </tr> <tr> <td>E2</td> <td>Well-justified stand with evaluative comments.</td> <td>2</td> </tr> <tr> <td>E1</td> <td>Unjustified stand.</td> <td>1</td> </tr> </tbody> </table>	Lvls	Descriptors	Marks	2	Two-sided argument with good use of evidence. Strong economic analysis.	4-6		<ul style="list-style-type: none"> • Max 5 marks - for good two sided answers without link to cost of compliance • Max 4 marks - one sided (T or AT) with link to cost of compliance 		1	One-sided argument with little/no use of evidence. Weak or underdeveloped economic analysis, with some errors.	1-3	E2	Well-justified stand with evaluative comments.	2	E1	Unjustified stand.	1	
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(e)		<p>Discuss whether the measures proposed by the Responsible Mica Initiative (RMI) is likely to be better than other government policies in achieving economic efficiency in the global market for natural Mica.</p> <p>Introduction</p>	[10]																		

	<p>Clarify that economic efficiency in this context would be achieved when resources are allocated efficiently in the global market for natural mica.</p> <p>Clarify criteria for assessing which measure is "better"</p> <ul style="list-style-type: none"> • [A] Appropriateness - Address root cause of problem • [S] Side effects - Least unintended consequences • [T] Time frame <p>Thesis 1: RMI better in achieving economic efficiency in the global natural Mica market</p> <ul style="list-style-type: none"> • Based on the Extract, firms from various countries can joining the RMI, and voluntarily support the coalition efforts, such as "supply chain mapping and legal frameworks establishment". • [A] Firms would voluntarily take into account their MEC at every step of the production process from the mining of Mica to the exporting to the cosmetic production. This helps the firms ensure that the cost of compliance is factored into their supply chains. MEC is voluntarily internalized and factored into the firms' actual private costs, such that $MPC^* = \text{actual MPC} + \text{MEC}$. A new equilibrium will be achieved where $MPC^* = MPB$, allowing the free market output to fall to Q_s. This will ensure that Q_s is achieved, DWL eliminated, thus alleviating the problem of misallocation of resources in the global natural Mica market • [A] "Community empowerment" in the Indian villages will also help ensure the workers are able to find alternative sources of income e.g. farming. This may reduce natural Mica mining, MEC is reduced, allowing the gap between Q_e and Q_s to be narrowed. Hence, allocative inefficiency is reduced <p>Anti-Thesis 1: Limitations of RMI</p> <ul style="list-style-type: none"> • [A] Effectiveness only limited to the countries/firms/organisations who join the RMI, which may not be representative of the entire global natural Mica market. • [A] Villagers may not be receptive to the programmes to build community empowerment • [S] May require government monitoring and enforcement, which may incur high opportunity costs • [T] Takes time as firms require a long time to slowly establish the mapping of supply chains / training to learn and improve skills take a long time. <p>Thesis 2: Government policies better in achieving economic efficiency in the global natural Mica market.</p> <p>[Student may choose to elaborate and evaluate any 1 government policy]</p> <ul style="list-style-type: none"> • Extract 3 indicated that the Indian government does not have a mechanism to incentivize the adoption of workplace and labour standards or to prevent illegally mined Mica from entering the global 	
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		<p>Mica supply chain, causing over allocation of resources in the natural Mica market.</p> <ul style="list-style-type: none"> • This highlights the necessity and importance of government direct intervention in contributing to economic efficiency in the global natural Mica market. Hence, government enforcement of policies will be more effective than relying on firms/organizations to join the RMI. • [Tax] Governments can impose taxes on firms using natural Mica, where tax = MEC at Qs, and lower production levels. This forces firms to internalize the externalities from Mica production mitigate the misallocation of resources and reduce allocative inefficiency. • [Regulation / Ban] Government regulation to ban child labour can also force transparency and accountability of the firm to reflect the actual private costs of producing Mica. Hence, MPC increases, reduce the misallocation of resources, reducing allocative inefficiency. • [Public Education] Public education about the externalities caused by mica mining and imperfect information to the consumers of natural mica based cosmetics as an indirect approach to address economic inefficiency in global natural mica market. This enable consumers of cosmetics to educate themselves on the problems with the Mica industry, thereby encouraging consumers to switch from natural mica based cosmetics to synthetic based cosmetics. This will eventually reduce the derived demand for natural mica, reducing allocative inefficiency. • [Subsidies] To encourage firms to switch away from production of natural mica to that of synthetic Mica via the lowering of cost of production of synthetic Mica, reduce overproduction of natural Mica to Qs. <p>Anti-Thesis 2: Limitations of government policies</p> <ul style="list-style-type: none"> • [S/A] Regulation and education needs to be financed by government resources, which incur high opportunity costs that could be better spent on improving the standard of living. In the case of India, the government resources could be used to develop better sanitation and education opportunities. Moreover regulations require high monitoring costs in order for the policy to be enforced consistently. • [T] Educating the public about the actual MPB / MPC of natural mica will take time as mindset may be entrenched and could be difficult to change <p>Conclusion</p> <ul style="list-style-type: none"> • RMI alone is not effective in achieving economic efficiency in the global natural mica market. • Requires a multi-pronged approach – while the RMI is good, it is a longer-term approach to map supply chains, build community 	
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empowerment and establish legal frameworks. However, there must also be deliberate action taken by the government to enact policies that help to reduce mica production in the short run and long run. Therefore, RMI will only be effective if it is coupled with proactive government action to achieve economic efficiency both in the short run and long run.

- In Extract 3, since India seems to be a major supplier of natural mica in the global markets, the Indian government's enforcement and compliance is key step to achieving economic efficiency. However, the India government's enforcement and compliance alone is insufficient. With globalisation, where supply chains span across various countries, it requires a multi-government approach – economic cooperation between countries to achieve economic efficiency in the global natural Mica market.

Alternative answers:

Possible links to dynamic efficiency and productive efficiency

- If government subsidizes natural mica producers to use R&D to extract natural mica in ways that are less destructive on the environment, dynamic efficiency is achieved. This can also be linked to allocative efficiency. If this policy helps to lower costs of production for natural mica producers as well, then productive efficiency is achieved.
- With RMI, natural mica firms are encouraged not to use child labour. This might incentivize them to become more dynamic efficient by becoming more innovative.

Mark Scheme

Lvs	Descriptors	Marks
2	<p>Higher L2 [6-7] Two sided with good use of evidence. Strong economic analysis</p> <p>Two-sided</p> <ul style="list-style-type: none"> • 2 policies - mechanism and limitations <p>Low L2-5 One sided with well-developed economic analysis. Good use of evidence</p>	5-7
1	<p>One-sided argument with some use of evidence. Weak economic analysis, with some errors.</p> <p>High L1-4</p>	1-4

	<ul style="list-style-type: none"> One-sided with underdeveloped economic analysis (or good analysis with no limitations); some use evidence Two-sided, but weak economic analysis; some use of evidence <p>Low L1-3</p> <ul style="list-style-type: none"> Descriptive, very weak economic analysis; may have many misconceptions; some use of evidence <p>One-sided</p> <ul style="list-style-type: none"> 2 policies - mechanism only but no limitations 1 policy only (mechanism + limitations) Answer only talks about RMI <p>Note:</p> <ul style="list-style-type: none"> only linked PE/DE to cosmetics market - max 1-3 linked PE/DE to cosmetics market + very weak reference to negative externalities - max 4 		
E2	Well-justified stand with evaluative comments.	2-3	
E1	Unjustified stand.	1	
			[30m]

Question 2

Government Responses to the COVID-19 Pandemic around the World

Answers

(a)	(i)	<p>With reference to Figure 1, compare the share of vaccinations across the given countries.</p> <p>Any 2 differences</p> <p>Comparison by Region</p> <ul style="list-style-type: none"> • Developed countries (UK and US) share of vaccinations are higher than developing countries (South Africa and India). • Developed countries having the highest share of vaccination <u>or</u> developing countries lowest. <p>Comparison against global average</p> <ul style="list-style-type: none"> • UK, US and India share of vaccinations are above global average while South Africa is not. • US and UK exceed global average, while India and SA closer to global average <p>Comparison by country</p> <ul style="list-style-type: none"> • UK having the highest share of vaccination <u>or</u> South Africa lowest. 	[2]
	(ii)	<p>With reference to Extract 4, explain one internal and one external factor contributing to greater risk of “government defaults” in various countries.</p> <p>Clarify what “government defaults mean” Government defaults are likely due to a significant rise in public debt because of high budget deficits. A budget deficit occurs when government spending exceeds the tax revenue collected by the government.</p> <p>Internal factor – Evidence [1] One internal factor contributing to “government defaults” in various countries is the “pressure on healthcare systems”. As the pandemic has caused many around the world to be in ill health, there is pressure on the government to spend on healthcare.</p> <p>External factor – Evidence [1] Another external factor is the “loss of trade and tourism”. [1] This causes a fall in X for the country and therefore a drop in the (X-M). As AD falls, ceteris paribus, there is a multiplied fall in real national income via the reverse multiplier effect.</p> <p>Explain how the factors affect G and T [2]</p>	[4]

	<p><u>Rise in government spending</u> As the pandemic has caused many around the world to be in ill health, governments have to increase spending on healthcare systems and vaccinations. Government may have to increase government spending and contribute to larger budget deficits and therefore larger public debts, causing greater risk of government default. [1]</p> <p>OR</p> <p><u>Rise in transfer payments</u> Increase in unemployment benefits payouts as a consequence of falling real national incomes and rising unemployment, larger public debts, causing greater risk of government default. [1]</p> <p><u>Fall in tax revenue</u> Fall in consumer incomes due to falling real national incomes means that there will be less income tax revenue generated, contributing to higher budget deficits and higher public debts, causing greater risk of government default. [1]</p> <p><u>Alternative factors that can be accepted:</u></p> <ol style="list-style-type: none"> 1. Climbing domestic borrowing costs resulting in the value of government (a borrower) debt to rise 2. Loss of trade and tourism resulting in less import spending, hence inevitably resulting in lower import tax/tariff revenue collected, assuming import tax rate unchanged. 	
(b)	<p>Explain how the data given in Extract 4 can be used to project inflation rates in advanced economies.</p> <p>Point 1 Correct formula Inflation rate = % change in nominal GDP - % change in real GDP *also accept inflation = change in nominal data - change in real data</p> <p>Point 2 Extract 4 Evidence Given that the advanced economies are projected to shrink 7% in nominal terms but only 4.5% in real terms, this means that the nominal GDP in these economies are projected to fall by 7% but the real GDP is expected to fall by 4.5%.</p> <p>Point 3 Projected inflation rate The inflation rate is projected to be $-7\% - (-4.5\%) = -2.5\%$.</p> <p>Note: Without Point 3, the answer cannot be awarded full credit.</p>	[2]

(c)	<p>With reference to Extract 8, comment on whether Singapore should raise domestic production of food and reduce import of food.</p> <p>[This question will be omitted in 2021 as it assesses the Common Last Topic]</p> <p>Students should explain economic problem with food import and how domestic food production can address economic problem + Limitations.</p> <p>Introduction: Singapore's current reliance on food imports will result in macroeconomic problems. Raising domestic production of food would help to alleviate these problems and achieve its macroeconomic goals.</p> <p>Thesis: SG should raise domestic production and reduce import of food</p> <p>Raising domestic product helps to achieve food security and lower risk of supply chain disruption - Since Singapore is a small and open economy, it is heavily import reliant and is highly predisposed to external supply shocks. It was mentioned in Extract 8 that many countries are moving into food protectionism as more nations go into lockdown during the coronavirus pandemic. Such disruptions to trade and supply chain may impede delivery of goods such as food, affecting production of goods and services by other firms in the economy. Short run costs of production would rise, reducing the short run aggregate supply. This causes GPL to rise and therefore imported inflation. Furthermore, real national income falls and may cause negative economic growth, slowing down economic growth and creating inflationary pressures.</p> <p>Raising domestic product helps to achieve food security and reduce panic buying during economic uncertainties - Achieving food security also helps to reduce instances of panic buying mentioned in Extract 8. There could be panic buying because consumers expect that food prices will rise in the future due to shortages and therefore they buy more in the current period. C rises, AD rises at a faster rate, resulting in a sharp rise in the GPL, resulting in a demand-pull inflationary spiral.</p> <p>Anti-thesis: Singapore should not raise domestic production of food and reduce import of food.</p> <p>Strengthening our food resilience is long-term strategy, with uncertain outcomes. The cost of financing the supply side policies required to achieve 30% of Singapore nutritional needs locally will be high, incurring opportunity costs in other areas of economic development. This however would be an operationally viable and sustainable policy if there has been past reserves accumulated.</p>	[4]
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	<p>[Nature of Economy/Time] As a small open economy facing land, water, energy and manpower constraints indicates that SG does not have the comparative advantage in producing food crops, as compared to its resource abundant trading partners. In the short run, attempting to raise domestic production of food and reducing imports of food may hike up costs of production for many food-related industries, causing profit margins for these firms to fall. SRAS falls and shifts up. GPL increases, resulting in domestic cost-push inflation. However, over time as Singapore builds its competencies in high tech food production, this may cease to be an issue.</p> <p>Conclusion Stand: Overall, the benefits would still be greater than the costs of increasing domestic production and reducing import of food. Singapore should raise domestic production and reduce import of food over time.</p> <p><i>Note: 2 marks for 1 reason on why Singapore should raise domestic production for food and reduce food imports and 2 marks for why Singapore should not.</i></p> <p><i>Give up to 3 marks if students provide 2 well-elaborated reasons for one side. At least 1 mark for comment.</i></p>	
(d)	<p>Discuss whether the government should be concerned with a “record jump in money flowing into Singapore bank accounts from abroad”.</p> <p>Introduction In Extract 5, it is mentioned that there is a “record jump in money flowing into Singapore bank accounts from abroad”. Singapore is open to capital flows and the “money flowing into Singapore bank accounts from abroad” would be considered an “inflow of deposits”.</p> <p>Such inflow of deposits would be classified as hot money inflows, which enters the country via the capital and financial account and would have an impact on increasing money supply in the country.</p> <p>Thesis: The government should be concerned that there is a sharp rise in the inflow of deposits</p> <p>Increased hot money inflows results in a rise in demand for the Singapore Dollar (SGD) and thus exerts an upward pressure on the external value of SGD. Relative prices of Singapore’s exports may be higher than other countries’. Foreign consumers might switch away from Singapore exports to their domestic goods or goods from other trade partners. Assuming demand for Singapore’s exports is price elastic, quantity demanded falls by more than proportionately. Singapore’s X falls and its (X-M) decreases.</p>	[8]

	<p>Extract 5 mentioned that the inflows of deposits would continue as long as there are regional uncertainties, such as those in Hong Kong and US-China trade tensions. Such persistent hot money inflows could culminate in excessive appreciation, greatly reducing Singapore's export price competitiveness relative to other trade partners. This would worsen Singapore's Balance of Trade as (X-M) falls, with the assumption of PEDx being more than 1.</p> <p>Furthermore, a sharp rise in capital flows also gives rise to the danger of increased volatility of these flows as mentioned in extract 5. This could mean an unstable exchange rate if there are sharp changes in capital flows or the increase in capital flows is too great. An unstable exchange rate would mean that it is more difficult for firms to predict streams of import expenditure and export revenue, increasing their uncertainty. Thus, they become less likely to invest, causing a fall in Investment spending.</p> <p>The fall in (X-M) and the fall in I (mentioned above) both cause the AD to decrease. There is a multiplied fall in real national income via the reverse multiplier effect. As national output falls, the firms reduce their derived demand for labour, contributing to rise in cyclical unemployment.</p> <p>Furthermore, as export revenue falls and import expenditure increases, the balance of trade worsens.</p> <p>Anti-thesis: The government should not be concerned that the Singapore economy is experiencing a sharp rise in the inflows of deposits</p> <p>With an increase in the supply of money supply, interest rates would fall. This would help reduce interest rates. The fall in interest rates will cause the costs of borrowing to fall for consumers and firms. Consumers will be able to buy more interest sensitive items on credit and there will be more investment projects where the expected rate of returns exceed the costs of borrowing. C and I increase. AD rise, ceteris paribus.</p> <p>Hot money inflow would cause an increase in demand for Singapore Dollar. The Singapore Dollar would appreciate, meaning 1 Singapore Dollar can buy more units of foreign currency. Cost of imported raw materials and manufacturing components become cheaper. Since firms in Singapore are largely reliant on imported inputs, their costs of production will fall and their profit margins will rise. SRAS increases and the SRAS curve shifts down. Real national income rises and general prices fall, thereby reducing import inflation.</p> <p>Conclusion</p> <p>Stand: Overall, it is unlikely that the government needs to be concerned about the rise in the inflows of bank deposits into Singapore</p>	
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	<p>Substantiation</p> <p>Concerns that this might result in an over-appreciation of the currency can be mitigated if the government intervenes in the Forex market to limit the appreciation of the Singapore Dollar In Extract 5, it was mentioned "Singapore's central bank continues to keep monetary policy settings at zero percent change per annum" and thereby reducing the overall loss in export competitiveness arising from deposit inflows.</p> <p>In addition, the government might also have to regulate other types of hot money inflows, such as excessive capital inflows into the Singapore property market, causing possible negative consequences on Singapore.</p> <p>Mark Scheme</p> <table border="1" data-bbox="373 846 1294 1167"> <thead> <tr> <th>Lvs</th> <th>Descriptors</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>Two sided, coherent analysis on how deposit inflows affect the Singapore economy Max 4m for one-sided well explained answers Max 5m for answers without reference to data</td> <td>4-6</td> </tr> <tr> <td>1</td> <td>Weak and incoherent analysis on how deposit inflows affect the economy</td> <td>1-3</td> </tr> <tr> <td>E2</td> <td>Well-justified stand with evaluative comments</td> <td>2</td> </tr> <tr> <td>E1</td> <td>Unjustified stand</td> <td>1</td> </tr> </tbody> </table>	Lvs	Descriptors	Marks	2	Two sided, coherent analysis on how deposit inflows affect the Singapore economy Max 4m for one-sided well explained answers Max 5m for answers without reference to data	4-6	1	Weak and incoherent analysis on how deposit inflows affect the economy	1-3	E2	Well-justified stand with evaluative comments	2	E1	Unjustified stand	1	
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(e)	<p>Assess whether Singapore is in a better position to recover from the economic effects of COVID-19 than the other Asian economies.</p> <p>Introduction Clarify key terms: "recover from the economic effects". The negative effects from the COVID-19 pandemic include a likely worsening balance of payment position due to the loss of trade and tourism as well as recession and rising cyclical unemployment.</p> <p>Thesis: Singapore is better positioned to recover from the economic effects of COVID-19 than the other Asian economies.</p> <p>Thesis 1: Singapore is in a better position to recover because of its "safe haven appeal"</p> <p>[State of economy] Extract 6 mentions that Singapore has a "safe haven appeal" because of political and economic stability, and because Singapore has generally been able to keep the pandemic under control. This is in stark contrast to our neighbours, some of which face political instability or unable to keep the pandemic under control.</p>	[10]															

Due to Singapore's safe haven appeal, there has been a rise in bank deposits in Singapore, which can have many positive effects on the Singapore economy. As mentioned earlier in part (e), the rise in money supply will lower the interest rates in Singapore and help to keep the costs of borrowing low for consumers and firms. There will be more investment projects deemed profitable for firms causing firms to increase spending on capital goods, allowing I to rise. Furthermore, consumers will be able to buy more big-ticket items like cars on credit, causing C to increase as well.

Also, foreign firms might find Singapore a more attractive investment destination due to political stability, economic stability, as well as stable exchange rates. Evidence from Extract 5 pointed out fears of a currency crisis in the region, creating uncertainty. Since Singapore has a stable exchange rate due to government intervention, firms find it easier to predict streams of import expenditures and export revenues for their businesses, allowing them to have greater certainty on profitability of investments, attracting more FDI entry into Singapore amid this pandemic, improving the country's balance of payment position.

As C and I rise due to the above factors, AD rises, ceteris paribus, and there is a multiplied rise in real national income. As production rises, there is also an increase in the derived demand for labour, causing cyclical unemployment to increase. This can offset the falling national income and rising unemployment caused by the pandemic.

Thesis 2: Singapore is in a better position to recover because it is a high income country experiencing sustained economic growth before the crisis which has helped it to achieve high accumulated reserves.

However, Extract 6 mentioned that some economies in Asia may be "emerging and developing economies" and "were already experiencing weaker growth before this crisis. In addition, some of these developing countries were described to be "low-income" in Extract 6, meaning that income tax revenue would also be limited as households do not earn much. The government tax revenue collected by these emerging and developing Asian countries tends to be low as well. The shock of COVID-19 now makes the challenges these economies face even harder". With the increasing anaemic growth because of the crisis, government tax revenue collected by these emerging and developing Asian countries will be even lower.

On the contrary, Singapore has been experiencing budget surpluses and accumulated reserves. Reserves are important because during times of economic crisis, the government can use expansionary fiscal policy to offset the fall in AD to mitigate the fall in real national income caused by the COVID-19 pandemic.

Anti-Thesis 1: Singapore is not in a better position to recover because other Asian economies may have also come up with policies to achieve recovery

Extract 6 mentions that Asian governments have introduced various economic stimulus packages, which are also known as Expansionary fiscal Policies. These include plans such as cash assistance, which is considered a transfer payment to households. This raises their income levels and their purchasing power, allowing them to consume more. As C rises, AD increases and there is a multiple rise in real national income and reduction in cyclical unemployment.

(Any one policy mentioned in the data that one Asian country is using will be accepted).

Anti-thesis 2: Singapore is not in a better position to recover because of the nature of its economy.

Given the small and open nature of the Singapore economy, it is highly dependent on trade and dependent on external demand, as opposed to domestic demand as evidenced in Extract 5.

The use of expansionary fiscal policy and short-run supply side policies, which include exemptions from government fees and charges, as mentioned in Extract 6, have a limited impact on our economy because they do not focus on the external sector.

On the other hand, for large and relatively less open economies like China, these policies would have a relatively large impact as compared to Singapore as domestic demand forms a larger proportion of GDP. Furthermore, the policies used do not have a positive impact on the balance of trade in Singapore although limited trade and travel has weakened it as well.

Conclusion

Stand: Overall, Singapore is better positioned to recover as compared to our Asian neighbours in the short run. However in the long run, Singapore's recovery ultimately relies on her neighbours' economic recovery due to her dependency on trade and external demand.

Substantiation

Our use of expansionary fiscal policy with a supply-side bias includes large amounts of spending on training of workers such as the SG JobsUnited scheme which helps to aid in long-run economic growth and reduce overall rates of unemployment.

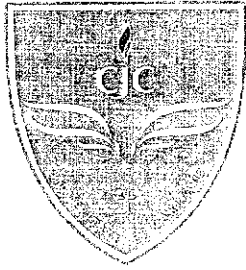
Although being small and dependent on trade might be an impediment during the pandemic as travel is restrained, we are a developed country with good infrastructure that supports the use of advanced communications technology. Therefore, trade can still go on even if face-to-face meetings across borders are reduced. Thus, technology does overcome the limitations to trade and travel to some extent.

When Singapore achieves a relatively high proportion of vaccination rates, it then has a greater ability to open up the country to tourism. Assuming that cases can be continued to be kept under control, this will help to raise our X further and aid in continued economic recovery.

Mark Scheme

Lvls	Descriptors	Marks
2	<p>Higher L2 (7m) Well-reasoned and balanced answer comparing the SG versus other Asian economies in post pandemic recovery.</p> <p>Answers in this range must have bring in at least two macroeconomic aim (for example: achieve economic growth and reduced unemployment)</p> <p>Lower L2 (5-6m) Two-sided underdeveloped analysis</p> <p>Or</p> <p>One-sided well-developed analysis of how Singapore is better than other ASEAN countries in post pandemic recovery.</p> <p>One-sided well developed answers– capped at 5m</p> <ul style="list-style-type: none"> answers only explain why SG in a better/worse position <p>Answers without extract evidence – capped at 6m</p>	5-7
	1	
E2	Well-justified stand with evaluative comments	2-3
E1	Unjustified stand	1

[30m]



**Catholic Junior College
JC2 Preliminary Examination
Higher 2**

ECONOMICS

9757/02

Paper 2 Essays

13 Sep 2021

No Additional Materials are required.

2 hours 15 minutes

READ THESE INSTRUCTIONS FIRST

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

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

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

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

[Turn over

Answer **three** questions in total.

Section A

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

- 1 A box of 50 disposable surgical masks cost \$6.00 in 2019, but rose sharply to \$50.00 a box in 2020. Yet when the Singapore Government recommended the use of bacterial filtration efficiency (BFE) >95% disposable surgical mask in early 2021, prices averaged at \$12.00 per box. Retailers shared that they have "sufficient stocks" and have "placed orders by container loads" in anticipation of further demand. Local face mask manufacturers are also monitoring demand and are ready to adjust production accordingly.

Adapted from: The Business Times, 25 May 2021

- (a) Using supply and demand analysis, explain the possible reasons for the changes in price of disposable surgical masks from 2019 to 2021. [10]
- (b) Discuss whether government intervention in the markets is always necessary to reduce the price of essential goods in Singapore. [15]
- 2 Research has shown that a healthy eating lifestyle has resulted in fewer diseases and extension of life expectancy among individuals, hence highlighting the need to modify human behavior through government interventions in the market for healthy food.
- (a) Explain why a government may wish to intervene in the market for healthy food. [10]
- (b) Discuss the extent to which government policy measures are likely to address the above sources of market failure. [15]
- 3 Dyson, the technology company best known for its vacuum cleaners, has scrapped a project to build electric cars. Sales of electric cars are climbing rapidly. Yet they still cost more to make than conventional cars that are significantly more polluting. Major manufacturers, like Volkswagen, can afford to plough tens of billions into the electric vehicle (EV) industry - on the basis that economies of scale will ultimately make the technology cheaper and generate returns. Dyson has concluded it simply can't afford to play with the big boys.

Source: BBC, 11 October 2019

- (a) Explain the factors that Dyson may have considered before deciding against entering the electric vehicle (EV) market. [10]
- (b) Discuss the extent to which a firm's behaviour is dependent on the threat of competition. [15]

Section B

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

- 4 Between 2008 and 2019, the United States went through the longest period of economic expansion, as measured by GDP, in its history. Despite this growth, the country is now experiencing its highest levels of income inequality in 50 years, worsening high-school graduation rates, and increasing prevalence of mental health conditions.

Adapted from: Channel News Asia, 29 November 2019

- (a) Explain whether growth in a country's Gross Domestic Product is an appropriate measure of how its standard of living has changed over time. [10]
- (b) Discuss whether the policies that a government may use to promote higher living standards would result in conflicts with its other economic goals. [15]
- 5 In 2016, China's government allowed married couples to have a second child, after decades of a one child policy rule. On May 31st 2021, the government declared a further relaxation and implemented a three-child policy to help the country deal with a rapidly ageing population.
- (a) Explain why the Chinese government would be concerned with the impact of an ageing population. [10]
- (b) In light of the above concerns, discuss whether the three-child policy is the most appropriate measure in enabling China to improve her economic competitiveness. [15]
- 6 Deflationary pressures were evident in the major economies in 2015–2016 due to the hesitant and uneven recovery in the global economy following the financial crisis. This was significantly exacerbated by the sharp declines in global oil prices. Singapore's inflation was negative for a total of seven consecutive quarters, the longest stretch of negative inflation recorded in its history.

Source: Economics Explorer Series, Monetary Authority of Singapore, 2018

- (a) Explain **two** main factors that cause deflation in Singapore. [10]
- (b) Discuss whether exchange rate policy should remain the most important policy instrument in maintaining price stability in Singapore. [15]

[END OF PAPER]

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2021 JC2 Preliminary Examination H2 Economics Paper 2
Question 1 Suggested Answers & Marking Scheme

- 1 A box of 50 disposable surgical masks would cost \$6.00 in 2019, but rose sharply to \$50.00 a box in 2020. Yet when the Singapore Government recommended the use of bacterial filtration efficiency (BFE) >95% disposable surgical mask in early 2021, prices averaged at \$12.00 per box. Retailers shared that they have “sufficient stocks” and have “placed orders by container loads” in anticipation of further demand. Local face mask manufacturers are also monitoring demand and are ready to adjust production accordingly.

Adapted from: The Business Times, 25 May 2021

- (a) Using supply and demand analysis, explain the possible reasons for the changes in price of disposable surgical masks from 2019 to 2021. [10]
- (b) Discuss whether government intervention in the markets is always necessary to reduce the price of essential goods in Singapore. [15]

Part A

Introduction

In this essay, we will attempt to use the concepts of demand, supply and relevant elasticities to account for the difference in how prices of disposable surgical mask have changed. Demand is defined as the amount of a good or service that consumers are both willing and able to buy at each possible price in a given period of time, ceteris paribus. Supply is defined as the amount of a good or service that producers are both willing and able to sell at each possible price in a given period of time, ceteris paribus. While price elasticity of demand (PED) measures the degree of responsiveness of quantity demanded of a good to a change in its price, ceteris paribus. And finally the price elasticity of supply (PES) measures the degree of responsiveness of quantity supplied of a commodity to a change in its price, ceteris paribus.

Body

Difference in Demand

When Covid-19 first hit Singapore, the virus was already rampaging across China and other parts of the world. As such there was a surge in demand for disposable surgical masks as it was deemed at that time as the safest option to protect oneself when heading out in a crowded place. As such the change in Taste and Preference towards owning disposable surgical masks to protect themselves and their family members caused an increase demand. This was made worst when tourists as well as visitors to Singapore were also purchasing these masks to send home to their loved ones whom may be experiencing a shortage of masks in their home country.

In 2021, even though the government recommended the use of bacterial filtration efficiency (BFE) >95% disposable surgical mask, there was no surge in demand for masks as there are alternatives to disposable surgical mask, such as reusable masks with filters. And with the almost 1 year implementation of border restrictions, the number of social visitors in Singapore would

have fallen. As such the increase in demand for disposable surgical masks will not be as significant as before.

As seen in the diagram below, the increase in price to P2 in 2021 is not as significant as to P1 in 2020 as compared to 2019

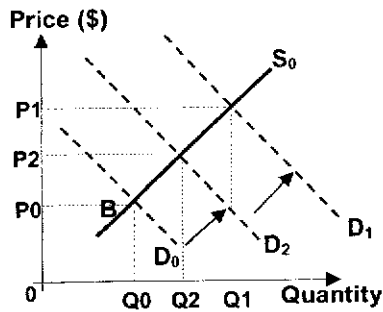


Figure 1

Difference in PES

At the start of the pandemic, there was a limited spare capacity of supply of disposable surgical masks in the private retail pharmacies. There was also a shortage of raw materials towards the production of disposable surgical masks. Also it is difficult to increase production or find alternative suppliers in the short run. As such the PES for masks was less than one/ supply for masks was price inelastic.

However, in 2021, retailers have established links with multiple international suppliers and local producers for masks have spare raw materials ready to increase their production to meet the needs of the population. As such the PES for masks was more than one/ supply for masks would be price elastic.

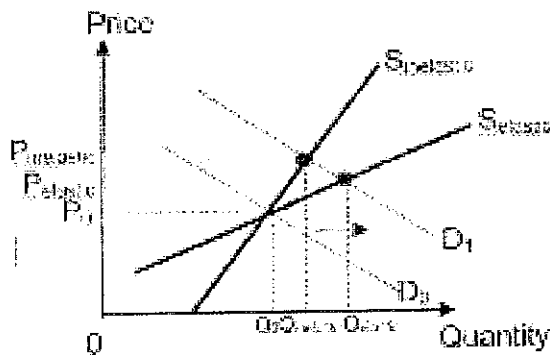


Figure 2

With reference to Figure 2, when there is an increase in demand from D_0 to D_1 and supply is price elastic at $S_{elastic}$, there will be a limited increase in equilibrium price from P_0 to $P_{elastic}$. However, the same increase in demand from D_0 to D_1 with a supply that is price inelastic at $S_{inelastic}$ will see equilibrium price increase significantly from P_0 to $P_{inelastic}$.

Difference in Supply

When Covid-19 first hit, there was no change in the supply for disposable surgical masks. However in 2021, producers expecting the pandemic to last long and there is a need for the masks, retailers sourced for different international suppliers for our domestic market. Local firms pivoted to the production of masks. As such increasing the supply in 2021.

The increase in supply partially offset the increase in demand and therefore there was a more limited increase in price in 2021. On the other hand, the increase in demand with no change in supply will result in a larger increase in price in 2020.

Note: Students may also argue that supply increased more than demand increased in 2021 and therefore price of surgical disposable masks fell from \$50 to \$120 from

Difference in PED

At the start of the pandemic, without much knowledge on how the virus spreads and the effectiveness of alternative masks, consumers did not perceive other types of masks to be close substitutes of disposable surgical masks. With the lack of substitutability, the demand of surgical disposable masks was highly price inelastic.

However in 2021, there were alternative to disposable surgical masks such as reusable masks with filters and therefore rendering the PED of masks to be more price elastic.

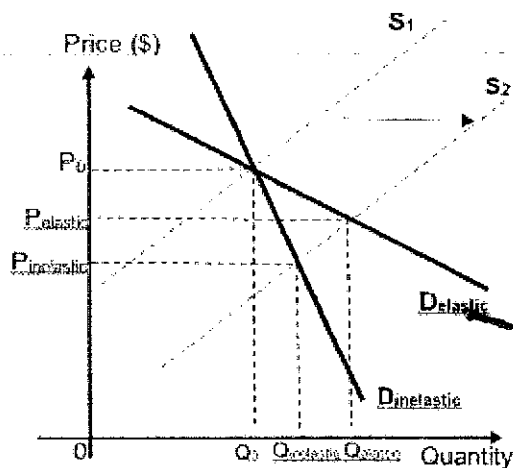


Figure 3

As seen in Figure 3 and taken in totality with the increase in Demand. When demand was more price elastic in 2021, it brought about a smaller drop in price with the increase in Supply and thus coupled with the increase in demand the increase in price for masks will be more muted.

Knowledge, Application/ Understanding and Analysis		
L3	<p>For an answer that uses analysis to explain the factors affecting prices of disposable surgical mask and at least three factors must be explained analytically to enter Level 3.</p> <ul style="list-style-type: none"> • There must be scope in the choice of 3 factors, Demand, Supply, PED and/or PES. • The analysis should be based on the economic framework of Demand Supply and Elasticity • The analysis must compare the difference in factors across time that resulted in price differences 	8 - 10
L2	A descriptive explanation of at least 3 factors that affect prices of disposable surgical mask or an analytical explanation of 2 factors with no use of elasticity concepts	5 - 7
L1	Knowledge of the factors affecting prices of disposable surgical mask (e.g. a largely unexplained list)	1 - 4

Part B

Discuss whether government intervention in the markets is always necessary to reduce the price of essential goods in Singapore. [15]

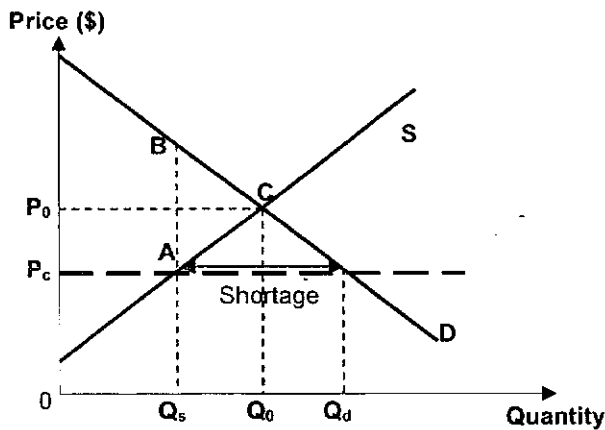
Introduction

Governments have two main microeconomic objectives, namely, efficiency in allocation of resources; and equity in wealth and income distribution and the Singapore government is no different. Thus the Singapore government will have to determine if the market price of essential goods are not meeting the target of equitable distribution and thus necessitate her intervention.

Body

Thesis: Necessary for government intervention to ensure the affordability of essential goods to the majority (Price Ceiling) and ensure equitable access to the goods

An effective price ceiling is a legally established maximum price below the market equilibrium price. The government may implement price ceilings to keep the price of a good at a level affordable to the majority, in order to protect consumers' interest, as well as to prevent exploitation by suppliers who may charge high prices in times of shortages, such surgical masks during a virus outbreak.



Diagrammatic Analysis of Price Ceiling

In Figure 1, a price ceiling P_c is imposed.

Figure 1: Imposition of an Effective Price Ceiling

Antithesis: It may not be necessary for government intervention as the intervention may worsen equitable access to the essential goods and allocative inefficiency

The imposition of a price ceiling at P_c will result in a decrease in quantity supplied (from Q_0 to Q_s) and an increase in quantity demanded (from Q_0 to Q_d).

At price P_c , quantity demand (Q_d) exceeds quantity supply (Q_s), creating a shortage ($Q_s Q_d$).

In a free market economy, price should increase when there is a shortage. However, with the price ceiling in place, sellers cannot sell above this price (P_c). Hence the shortage cannot be eliminated and only Q_s is traded in the market.

Welfare Analysis of Price Ceiling

Without price control, at P_e and Q_e , the economic welfare is represented by Area ABC in Figure 31, which is the sum of consumer surplus (Area D+E) and producer surplus (Area F+G+H).

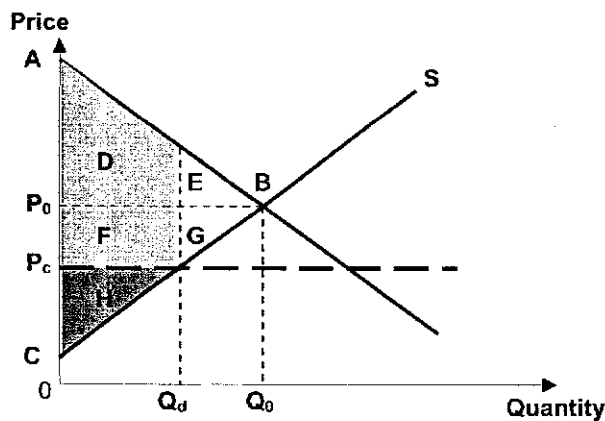


Figure 2: Welfare Analysis of an Effective Price Ceiling

As a result of the price ceiling, P_c , the new producer surplus is represented by Area H. There is a loss of producer surplus of Area F+G.

On the other hand, the new consumer surplus is represented by shaded Area D+F. There is a loss in consumer surplus of area E but also a transfer of surplus from the producers to the consumers of Area F.

Therefore, government intervention is unnecessary as it leads as the price ceiling could lead to allocative inefficiency. Economic welfare is represented by area D+F+H. As a result of the price ceiling, a welfare loss is created. The **welfare loss is represented by Area E+G** (reduction in consumer surplus and consumer surplus after the price ceiling is imposed).

Furthermore, government intervention is unnecessary as it leads to inequity in access to surgical masks. For example, when a shortage is experienced, the commodity would have to be allocated on a first-come-first served basis, by either producer's preferences or through government's preference (rationing). We can see that producer imposing a limit on the number of boxes of masks a customer can buy and government allocating surgical masks to healthcare sectors first before releasing extras for sale to the general public. A 'black market' where purchases occur illegally at a price higher than the maximum price of P_c could result, whereby profiteers purchase surgical masks and then resell them online at an exorbitant price to those who can afford it.

Note: Students may analyse other forms of government intervention, e.g. subsidies to increase supply

Anti-Thesis: Not necessary for government intervention (free market mechanism)

Due to the limited amount of resources to cater to humans' unlimited wants (i.e. scarcity), there is a need to decide how to allocate resources among competing wants to maximise society's welfare. This is done by addressing the three central questions of 'what and how much to produce', 'how to produce' and 'for whom to produce'. In a free market economy, the basic coordination and communication system to allocate scarce resources will be the price mechanism. Prices determine how much of the good consumers choose to purchase and how much producers choose to produce. Therefore, prices act as signals to producers to adjust allocation of resources to production, until any prevailing surpluses or shortages are removed.

'what and how much to produce'

The free market uses prices as signals in deciding what and how much to produce to ensure that society's welfare is maximised as the goods that society value more are produced in higher quantity. This achieves allocative efficiency. In the free market, consumers reflect their willingness and ability to purchase a particular good through price. They will bid up prices of the good that they value more to maximise utility. When consumers value a good more than before, demand for it increases and hence price increases, ceteris paribus. For example, if there's a higher demand for surgical masks from D_0 to D_1 , there will be a shortage of Q_0Q_2 at P_0 (Figure 3). In response to the shortage, consumers will compete among themselves and bid up the price.

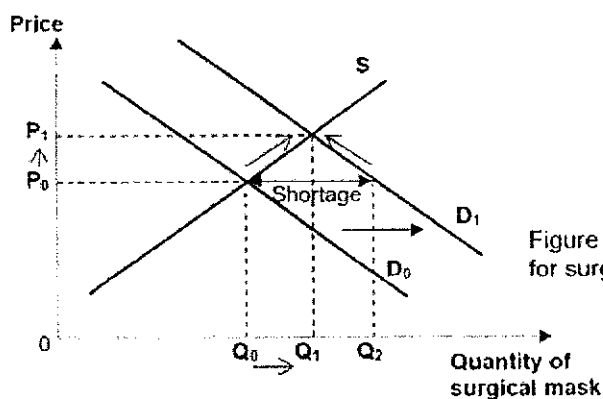


Figure 3: Increase in Demand for surgical mask

Due to the upward pressure on price, producers, being profit-driven, would be more willing to allocate more resources, e.g. labour to the production of surgical masks. This is also seen in “placed orders by container loads” in anticipation of further demand. Local face mask manufacturers are also monitoring demand and are ready to adjust production accordingly.” Therefore, producers will channel more labour from the production of other medical products to increase the Q_s of surgical masks from Q_0 to Q_1 .

At the same time, the increase in prices will cause consumers to reduce the Q_d of surgical masks from Q_2 to Q_1 . The shortage will be cleared, and there will therefore be a higher equilibrium quantity and price of surgical masks, as indicated by Q_1 and P_1 respectively.

‘how to produce’

In producing more of the goods that fetch relatively higher prices in the market, there is also a need to decide which factor input combination to adopt to produce the desired output. In the free market, producers would consider the relative price of labour and capital, and they would adopt the least-cost production technique so that, for a given price, they would get the maximum profit. So labour and capital would be employed in a combination that incurs the least opportunity cost to produce a given output. More output would be generated per unit of input, hence achieving productive efficiency, i.e. a given output is produced at the least possible cost.

‘for whom to produce’

Because of the competing wants, there is also a need to decide who gets the products produced. Those who value a good more would be willing to pay more for it. Producers would therefore distribute the goods to those who are willing and able to pay more for it as they also seek to get the highest revenue possible out of the products produced. As the final products produced will be obtained by those whose valuation of the good is higher, the price mechanism ensures that allocative efficiency is achieved.

Conclusion

Stand: I argue that through the free market mechanism, the price acts as a signal for producers to react with the productions and thus the market will eventually clear. But when considering the equity aspect of this case, there is without a doubt a need for any government to intervene.

Substantiation:

Since the micro objective the Singapore, for the matter - any government, is the equal distribution of income. The government will be required to assist in ensuring the lower income group of population have access to essential goods such as surgical masks during a pandemic where they are not priced out of the provision of the masks if the market is left unchecked.

Sometime Special:

Singapore government can also through the state owned enterprise such as Temasek Holdings to distribute alternatives to surgical masks such as reusable face masks to the general population and more importantly the lower income group.

Knowledge, Application/ Understanding and Analysis		
L3	<p>For an answer that provides an analytical explanation (e.g. Demand-Supply framework) of how Singapore government may respond to the price changes of face mask</p> <ul style="list-style-type: none"> - Answers should address two different perspectives to analyze the economic need to intervene for essential goods to enter L3 - Answers should address the importance of free market mechanism and government micro economic objectives 	8 - 10
L2	<p>For an answer that gives a descriptive explanation of two different perspectives to analyze the economic need to intervene for essential goods</p> <p>OR an answer that uses appropriate analysis to explain one perspective to analyze the economic need to intervene for essential goods (max 5)</p>	5 - 7
L1	For an answer that shows knowledge of government's strategy in market for disposable surgical mask	1 - 4
E3	For an answer that arrives at an analytically well-reasoned evaluation of reasons for and against government intervention, e.g. weighing the importance of factors; evaluating critically alternative theoretical explanations, contemporary issues, perspectives, policy choices; recognising unstated assumptions; evaluating their relevance; and synthesising economic arguments to arrive at well-reasoned judgements and decisions.	4 - 5
E2	For an answer, that makes some attempt at an evaluation of reasons for and/or against government intervention but does not explain the judgement or base it on analysis, e.g. weighing the importance of factors.	2 - 3
E1	For an answer, that gives an unsupported statement to evaluate the reasons for and/or against government intervention.	1

2021 JC2 Preliminary Examination H2 Economics Paper 2
Question 2 Suggested Answers & Marking Scheme

- 2 Research has shown that a healthy eating lifestyle has resulted in fewer diseases and extension of life expectancy among individuals, hence highlighting the need to modify human behavior through government interventions in the market for healthy food.
- (a) Explain why a government may wish to intervene in the market for healthy food. [10]
- (b) Discuss the extent to which government policy measures are likely to address the above sources of market failure. [15]

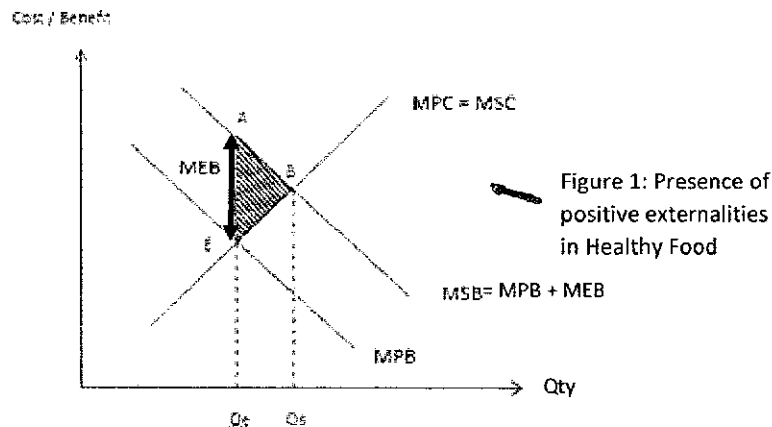
Suggested Answer for (a):

Introduction

- Market failure is defined as a situation where there is a misallocation of resources in a particular market(s). In this case, healthy food is a merit good that is being underconsumed due to the ignorance of positive externalities. The good is also underconsumed due to the presence of an information gap where there is a divergence between actual and perceived marginal private benefits.

Body

[Part 1: Explain the market failure associated with ignorance of positive externalities]



- As seen in figure 1, in the free market, consumers will maximise their net benefits by equating marginal private costs and marginal private benefit, ie, $MPC=MPB$. The private optimal output will be at Q_e . An example of a marginal private benefit of consuming healthy food is better personal health. A marginal private cost would be having to pay for the healthy food. Assume that marginal private cost is the same as marginal social costs, $MPC=MSC$, i.e. marginal external costs is zero, $MEC=0$.

- There is market failure as the consumption of healthy food generates positive externalities. Positive externalities are spill-over benefits to third parties not involved in the production or consumption of healthy food. An example would be the benefits of higher output generated per man-hour that firms can enjoy from having healthier workers with longer life expectancy as part of the workforce. Another example would be the reduction in possible healthcare costs that family members may have to bear should one fall ill from not eating healthy food.
- MSB is higher than MPB at all output levels and the vertical distance between MSB and MPB represents the MEB. The socially efficient equilibrium is where $MSC=MSB$ at output Q_s . At Q_s , societal welfare is maximised.
- It is noted that Q_s is greater than Q_e , hence there is an under-consumption of healthy food where MSB exceeds MSC at this output level and there is hence a deadweight loss, which is the welfare loss not gained by anyone in society, represented by the shaded area ABC in Figure 1.

[Part 2: Explain market failure associated with imperfect information]

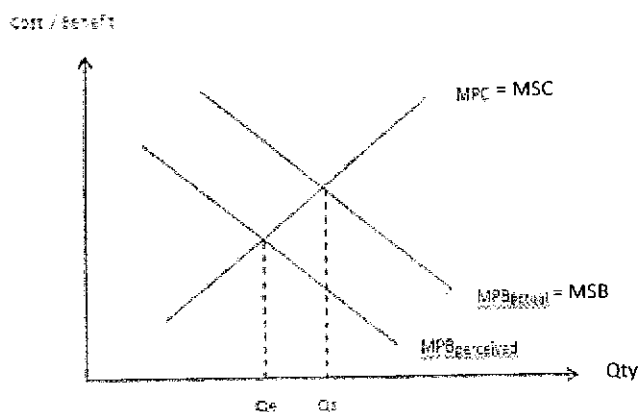


Figure 2: Imperfect information in market for Healthy Food

- Consumers may also have imperfect information when it comes to consuming healthy food. They may overestimate or underestimate the actual costs and benefits of such goods. In order to allocate resources efficiently, markets will need to consume up to the point where $MSB=MSC$. In the absence of externalities, $MSB=MPB$ and $MSC=MPC$.
- However, when consumers are unaware of the actual benefits of consuming healthy food, the perceived MPB is no longer equals to actual MPB. As a result, consumers will not consume at the 'correct' amount of healthy food. In the case of healthy food, consumers tend to underestimate the marginal private benefits, thinking that it does not benefit them as much as it actually does. In Figure 2, MPB perceived is below MPB actual hence leading to an underconsumption of healthy food of $Q_e Q_s$.

*Other relevant sources of market failure such as asymmetric information and market dominance are accepted.

Conclusion

- Hence, the above are some reasons why a government may wish to intervene in the market for health food.

Mark Scheme

Knowledge, Application/Understanding and Analysis		
L3	For an analytical answer that explained 2 sources market failure well – positive externalities and imperfect information, with consistent reference to healthy food.	8 – 10
L2	For a descriptive explanation of 2 sources of market failure – presence of positive externalities and imperfect information, with some gaps. There ought to be reference that healthy food is a merit good. Max L2 – 5m if students only explained 1 source of market failure well.	5 – 7
L1	Points are made incidentally with a lack of economic analysis. Largely descriptive answer, often with gaps and no/little reference to context.	1 – 4

Possible answer for (b):

(b) Discuss the extent to which government policy measures are likely to address the above sources of market failure. [15]

[Thesis: Government policies intervention such as the use of subsidies and public education can reduce the extent of market failure.]

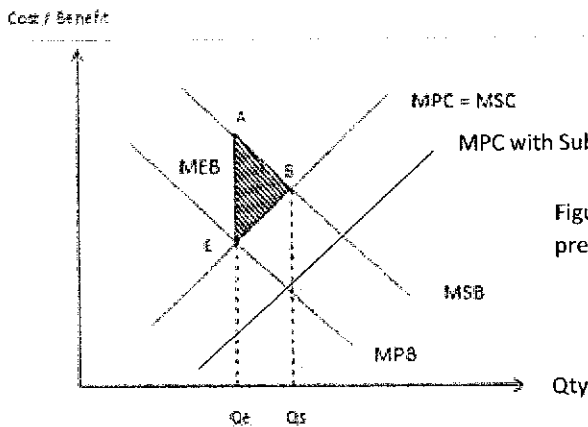


Figure 3: Subsidies to address presence of positive externalities

- Government intervention can help to internalise the MEB of healthy food through the implementation of a subsidy equivalent to the MEB of consuming healthy food. This will help to reduce the costs of production and shift MPC curve to the right to MPC + subsidy as shown in Figure 3. With lower costs of production, this will make the price of healthy food more affordable to consumers, hence increasing their consumption to Qs where MPB = MPC with subsidy. In this way, the deadweight loss to society will be eliminated.
- One advantage of using subsidies is that it addresses the root cause of the problem and can be implemented quickly by well established governments in many developed nations.

- However, a prevalent limitation of using a subsidy is the negative side effects of added financial costs and burden on public spending which can in turn lead to a burden on taxpayers. This can also mean the governments incurring opportunity costs of having to foregone the use of these funds in areas with more urgent need, eg, education. Furthermore, the policy may not be feasible since it may be difficult to measure the exact MEB and estimate the true amount of subsidy to give.

AND

- The government can also supplement the above subsidy policy with public education. This can be done with a comprehensive educational campaign that the government can launch to increase the public's awareness on the various kinds of healthy food available. The campaign can tap into various media platforms in order to reach out to all age groups on the benefits of eating healthy food such as quinoa. Public education is seen to reduce the information gap created as a result of the divergence between the perceived level of marginal private benefits and the actual level of marginal private benefits. Through the educational campaign, consumers can find out more information about the many benefits of consuming healthy food. There is an increase in consumption to Q_s where MPC with subsidy = MPB .
- The policy of public education addresses the root cause of imperfect information since the public may not be very aware of the actual benefits of eating healthy food.
- However, such a policy will take time to implement and see effects as mind-sets are difficult to adjust. These campaigns are also costly and often seen as a drain on government resources.

[Anti-thesis 1: Government intervention may not be required if the firms are able to address the above sources of market failure.]

- Firms selling healthy food may be in a better position to provide information about the products they sell. They could print out the nutritional information of their products and label on their products in a prominent manner. Such a measure can be part of a broader advertising campaign for firms to bring more awareness of their products to the consumers and tap the increasing consumers' preference and increasing demand for healthier alternatives to increase total revenue. However, one must be careful so as to avoid the possibility that the 'less healthy' food are seen as the inferior alternative of 'healthy' food.

[Anti-thesis 2: Government intervention may lead to worse outcomes due to government failure]

- There are limits to government intervention which can arise largely from an incompetent one. For example, a government suffering from persistent and deepening government debt may find themselves stretched in terms of the funds they can allocate to say, subsidising the consumption of healthy food. The government will need to carefully weigh the pros and cons of using subsidies in this case.
- Furthermore, if a government increases subsidies for healthy food, it will entail less funding and hence, less intervention in other markets subjected to market failures. Thus the opportunity cost of increased funding by the government in this market will affect the efficiency in other markets if the increased spending were used for these other markets instead. Hence government intervention may be less than ideal and lead to worse outcomes.

Conclusion

[Stand] I believe that the degree of market failure is substantial enough to warrant government intervention.

[Substantiate] With a fast paced and hectic lifestyle, it is becoming more important to manage one's health by eating healthy food. This can potentially reduce the healthcare costs to society in the future as well as maintain, if not, increase the productivity of the workforce in general. Hence, it is worth the funds that governments can allocate to finance various policies to increase the consumption of healthy food. The benefits of allowing consumers more affordable healthy food far outweigh its costs.

In the context of Singapore, I believe both policies of subsidising healthy food and public education will be effective and should be implemented together to address the sources of market failure faced in the market for healthy food. This is because the Singapore government can always apportion part of her accumulated budget surpluses to fund the subsidies and educational campaign. This can also help to manage a rapidly ageing population likely to add stress on the healthcare system by improving the health of Singaporeans in general and increasing life expectancy. With most adults receiving a higher education in recent years, any public education campaign can also be assured of success as the information can be passed to consumers quickly and effectively.

Mark Scheme

	Knowledge, Application/Understanding and Analysis	
L3	Well-developed argument as to the need for government intervention in the healthy food market or not. Good economic analysis and contextualisation to healthy food. Max L3-8m to be awarded for well-analysed responses lacking in contextualisation. Minimum two policies needed to enter L3. Policies should address both sources of market failure identified in (a) to hit high L3 (more than or equal to 9).	8 – 10
L2	Balanced argument as to the need for government intervention in the healthy food market with some inconsistencies in the quality of explanation. Max L2 – 6m for a very well developed explanation and discussion of government policies and little else.	5 – 7
L1	Lack of economic analysis with a largely descriptive answer.	1 – 4

E3	A well-justified stand that considers the usefulness of policies to address the market failure involving healthy food and arrive at a reasoned conclusion.	4-5
E2	Answer makes a stand that attempts to use economic justification with little/no attempt to consider usefulness of policies.	2-3
E1	Answer makes an unjustified stand.	1

2021 JC2 Preliminary Examination H2 Economics Paper 2
Question 6 Suggested Answers & Marking Scheme

- 6 Deflationary pressures were evident in the major economies in 2015–2016, due to the hesitant and uneven recovery in the global economy following the financial crisis. This was significantly exacerbated by the sharp declines in global oil prices. Singapore's inflation was negative for a total of seven consecutive quarters, the longest stretch of negative inflation recorded in its history.

Source: Economics Explorer Series, Monetary Authority of Singapore 2018

- (a) Explain **two** main factors that cause deflation in Singapore. [10]
- (b) Discuss whether exchange rate policy should remain the most important policy instrument in maintaining price stability in Singapore. [15]

Part A

Introduction

Price instability is defined as a situations where prices in a country is fluctuating considerable over time. This can mean prices going up rapidly or prices spiralling down. In this essay, I will be explaining two factors contributing to the sharp decline of prices in Singapore as indicated in the preamble. They are namely, deflation due to AD falling and deflation due to SRAS rising (or imported deflation).

Body

Deflation due to a fall in AD

P: Deflation is a situation where AD is falling further from **full employment**, **Yf** hence generating a **sustained decrease in GPL from P4 to P1**. Deflation, in this case, is caused by a fall in AD when economy is close to or at full employment.

E: A key factor causing AD to fall is the ~~weak~~ weak recovery of the global economy following the financial crisis thus resulting in less demand for Singapore's exports. Since net exports is a component of AD, AD falls, possibly continuously from AD₄ to AD₃ and to AD₂.

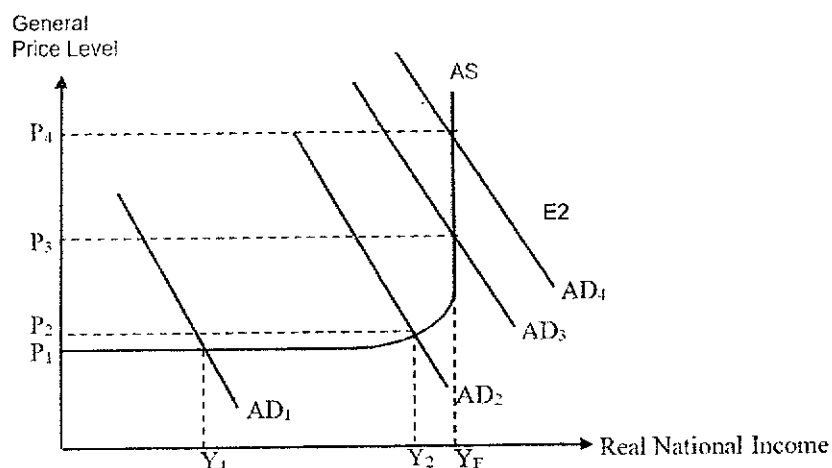


Figure 1 Deflation due to AD falling

Adjustment process:

For such a deflation to occur, there must be continuous decreases in aggregate demand along the intermediate and/or the vertical range of the AS. This is illustrated by a further leftward shift of the AD curve from AD₃ to AD₂ (at full employment Y_F). Price level will fall steeply from P₃ to P₂. We say that the price level is being *pulled downwards*.

In response to the decreasing demand, producers will be producing less goods and services which free up more unemployed resources **due to the increase in spare capacity**. This may also drive down the cost of factors of production, thus leading to a downward pressure on price level.

E: Singapore is a **very open economy** with the domestic demand (Cd) forming an insignificant portion of the total demand while the external demand (X-M) forms the bulk of total demand. As a result, the net export value is likely to be the most important influence on AD. There may also be some effects from a fall in investment (I) especially as foreign investment has fallen due to the poor global outlook. On the other hand, private consumption (C) and government spending (G) are of ~~much~~ less or even no concern with less significant effect on the AD of Singapore.

Body 2: Deflation due to rising SRAS (falling costs of production)

P: Deflation can also occur when there is a sustained decrease in the unit cost of production independent of changes in AD leading to sustained decrease in the General Price Level (GPL).

E: On the cost side, a decrease in the costs of production could be due to the following factors: falling costs of factor inputs, like energy, raw materials, capital, or falling labour costs owing to weak labour unions, and falling costs of production not matched by a huge rise in productivity. A decrease in the cost of production will lead to a rise in SRAS. Assuming aggregate demand is unchanged, a rise in SRAS will lead to a fall in the general price level resulting in deflation. As SRAS rises from AS₂ to AS₁, GPL falls from P₂ to P₁ and deflation ensues.

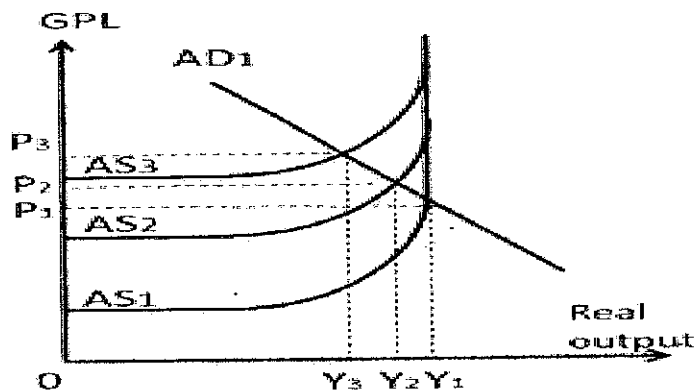


Figure 2

E: As Singapore imports much of her inputs from other countries, any fall in the prices of these imported inputs can lead to a rise in her SRAS. For instance, a fall in the global price of oil has led to a reduction in the costs of production of many goods and services leading to a rise in SRAS.

**Can also elaborate on imported deflation or structural deflation.*

Knowledge, Application/ Understanding and Analysis		
L3	<p>For an answer that uses analysis to explain the factors affecting price stability in Singapore and two factors must be explained analytically to enter Level 3.</p> <ul style="list-style-type: none"> Choice of 2 factors, Demand-Pull Deflation, Cost-Push Deflation *Answers for <u>Inflation analysis</u> is accepted. The analysis should be based on the economic framework of AD-AS Framework. High L3 answers (9 and above) would include some real world examples in Singapore. 	8 - 10
L2	A descriptive explanation 2 factors that affect price stability in Singapore or an analytically explanation of 1 factor.	5 - 7
L1	Knowledge of the factors affecting price stability in Singapore (e.g. a largely unexplained list).	1 - 4

Part B

Discuss whether exchange rate policy should remain the most important [15] policy instrument in maintaining price stability in Singapore.

Introduction

Keeping stable prices is one of the government's main macroeconomic objectives. Most economists and policy makers consider the inflationary pressure to be low and stable if it is in the range of 0-3% of annual changes in the consumer price index (CPI). High deflation rates in

Singapore may also have adverse impacts on the level of investments flow into the country, thereby slowing down economic growth. If deflation is accompanied by periods of low or negative economic growth then there is a need to control the rate of deflation.

Overview:

In this essay, we will look at whether exchange rate devaluation will remain the most important policy instrument in managing price stability, in this case, controlling the rate of deflation in Singapore.

Thesis 1: Devaluation of SGD helps to curb falling prices due to AD falling

P: Singapore can devalue the Singapore dollar in order to curb falling prices due to AD falling through attempts to increase the net exports revenue, i.e. (X-M).

E/E: A devaluation of the Singapore currency will result in a fall in the price of Singapore's exports in terms of foreign currency. This will increase the quantity demanded of Singapore's exports in Singapore dollars from the rest of the world. Assuming that the PED of exports is greater than 1, then the quantity demanded of exports will rise more than proportionately, and export revenue (X) rises. At the same time, a weaker Singapore dollar also increases the price of imported goods (P_m) in domestic currency. Domestically produced goods are now relatively cheaper. Hence the demand for domestically produced goods will rise due to an expenditure-switching effect where consumers switch away from the relatively more expensive imported goods to the cheaper domestic goods instead. This will cause domestic consumption (C_d) to rise, while import expenditure (M) falls. Since $AD = C + I + G + (X - M)$, with a rise in export revenue and domestic consumption, there will be a rise in AD from AD₁ to AD₂. This will mitigate the problem of deflation and the policy can help to reduce demand pull deflationary pressure in the economy by increasing GPL from P₁ to P₂. Prices are no longer falling and price stability is restored.

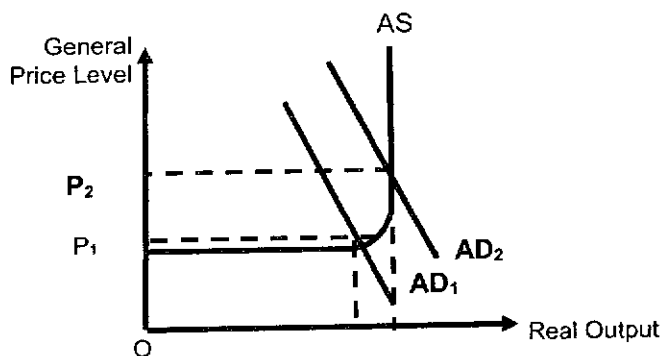


Figure 3:

EV: The extent to which deflation is mitigated depends on the extent to which AD and thus X and C_d rises. The extent by which C_d rises depends on the degree of substitutability between domestically produced goods and imported goods. If they are close substitutes, then the rise in import prices in SGD will bring about a significant increase in demand for domestically produced goods and thereby a significant rise in C_d and hence AD. This will increase the effectiveness of devaluation of SGD in curtailing deflation due to AD falling. However, Singapore may have limited resources to have domestically produced goods, thus the impact on C_d would be limited.

Anti-thesis 1: Exchange rate policy should be used to curb cost push imported inflation instead

It is important to note that the above policy of devaluation will only work for countries with a relatively price elastic demand for imports. However, in the case of Singapore, given the small and open nature of the country faced with a lack of natural resources. Singapore has to rely heavily on imported products including raw materials from other countries. Therefore, it is unlikely that she will devalue her currency unless there is persistent negative economic growth leading to persistent falling prices. Singapore has adopted the policy of a gradual and modest appreciation of the Singapore dollar to manage imported cost-push inflation instead.

Furthermore, devaluation can erode the confidence of foreign firms wishing to invest in the country. This may reduce the amount of foreign direct investment inflow into Singapore, hence reducing the investment component of her AD. In turn, this will drag the AD down contributing to a worsening deflation situation. While devaluation can temporarily improve on Singapore's export competitiveness and increase AD, the exchange rate is used more pre-dominantly to manage external price stability rather than internal price stability.

Anti-thesis 2: Other expansionary demand-side policies help to curb falling prices due to AD falling

The Singapore government can use **expansionary fiscal policy** to arrest the falling AD and thus curb the falling price. An increase in government expenditure will directly **increase AD, ceteris paribus**. A reduction in income / corporate tax rates will increase disposable incomes and in turn increase consumption and investment, hence **increasing AD, ceteris paribus**. A fall in profit tax will encourage more investments as firms have more ability to engage in innovation. All of these initiatives will **increase AD**. Since $AD = C + I + G + (X - M)$, with a rise in G, C and I, there will be a rise in AD from AD1 to AD2 in Figure 3. This will mitigate the problem of deflation and the policy can help to reduce demand pull deflationary pressure in the economy by increasing GPL from P1 to P2. Prices are no longer falling and price stability is restored.

While the expansionary fiscal policy can help to manage deflation, rapid/over expansion of the economy may create another aspect of price instability, inflation. Thus there needs to be a measured approach to increasing AD, furthermore the policy may suffer from time lags such as implementation lag and thus the government may over intervene not recognising the lag. There is also a need to further support the economy supplementing with supply-side policies to maintain price stability

Anti-thesis 3: No need to curb falling prices due to SRAS rising

Deflation caused by *cyclical price changes* and *supply-side improvements* (e.g. fall in price of oil) are not a concern. Cyclical price changes are **transitory** as prices change with business cycles and will increase eventually when economic boom returns. On the other hand, supply-side improvement usually bring about economic growth along with deflation, especially when economy was originally operating at or near productive capacity, because the economy's productive capacity expands to accommodate high level of AD, real national income increases. This is especially so when there is a fall in cost of production thereby increasing the SRAS. Government should look into exploring further improvements in productivity to lower cost of production as it will make our exports more price competitive and thus having further expansionary impacts in the future.

Conclusion: Exchange rate policy should remain the most important policy instrument in maintaining price stability in Singapore

Stand:

Given deflation can be especially worrying if it is due to a **prolonged fall in AD**, and consumers and producers come to expect prices to fall even further. Exchange rate appreciation has been the main policy tool used to control inflation/deflation in Singapore through its impact on keeping import prices and hence costs of production under control. To boost Singapore's AD, the use of exchange rate policy would be the most effective and thus the most important policy instrument in maintaining price stability in Singapore.

Substantiation:

Since Singapore is an extremely open economy, due to lack of natural resources, we are extremely reliant on imported factor inputs and goods and services as such, the exchange rate policy will be able to keep imported inflation at bay and lower cost of production for domestic firms if required. Singapore is also dependent on the global market for selling our exports, thus the use of exchange rates will be crucial for maintaining the price competitiveness of the exports.

Singapore should also continue to devote resources towards supply side policies to ensure the Singapore makes the best use of the scarce resources (domestic or imported) and becoming more productive efficient thus lower cost of production. Supply side policies to encourage innovation and enhancements to our exports to ensure its competitive edge and its premium status. These may not have a direct impact on price stability in the short run but it will be crucial in the long run. Thus during periods of deflations, the Singapore government should devote resources towards pushing the potential capacity of the country.

Knowledge, Application/ Understanding and Analysis		
L3	<p>For an answer that provides an analytical explanation (e.g. AD-AS framework) of how Singapore's policies may respond to the price changes</p> <ul style="list-style-type: none"> - Answers should address at least two different economic policies including exchange rate policy to enter L3 - Answers should address the importance of exchange rate as well as price stability 	8 - 10
L2	<p>For an answer that provides a descriptive explanation (e.g. AD-AS framework) of how Singapore's policies may respond to the price changes</p> <p>OR an answer that provides an analytical explanation (e.g. AD-AS framework) of how 1 Singapore policy may respond to the price changes</p> <ul style="list-style-type: none"> - There is some use of economic frameworks but it may be inconsistent or inaccurate - Answers address the importance of exchange rate as well as price stability 	5 - 7

L1	For an answer that shows knowledge of economic policies and price stability	1 - 4
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E3	For an answer that arrives at an analytically well-reasoned judgement about whether policies that help to promote price stability and their effectiveness. This analysis may also involve weighing the importance of factors; evaluating critically alternative theoretical explanations, contemporary issues, perspectives, policy choices; recognising unstated assumptions; evaluating their relevance; and synthesising economic arguments to arrive at well-reasoned judgements and decisions.	4 - 5
E2	For an answer that makes some attempt at a judgement about whether policies that help to price stability and its effectiveness but does not explain the judgement or base it on analysis.	2 - 3
E1	For an answer that gives an unsupported statement(s) about whether policies that help to promote price stability.	1

1

2021 JC2 Preliminary Examination H2 Economics Paper 2
Question 3 Suggested Answers & Marking Scheme

- 3 Dyson, the technology company best known for its vacuum cleaners, has scrapped a project to build electric cars. Sales of electric cars are climbing rapidly. Yet they still cost more to make than conventional cars that are significantly more polluting. Major manufacturers, like Volkswagen, can afford to plough tens of billions into the electric vehicle (EV) industry - on the basis that economies of scale will ultimately make the technology cheaper and generate returns. Dyson has concluded it simply can't afford to play with the big boys.

Source: BBC, 11 October 2019

- (a) Explain the factors that Dyson may have considered before deciding against entering the electric vehicle (EV) market. [10]
- (b) Discuss the extent to which a firm's behaviour is dependent on the threat of competition. [15]

Part A

Introduction

In this essay, I will assume that Dyson is a producer that seeks to maximize profits. Before undertaking any decision, it would consider the impact on its average costs (AC) and average revenue (AR) that would affect its profits.

Body (*Note: Students do not need to address all 4 factors provided here*)

Factor 1: Before deciding against entering the EV market, Dyson would have considered that the costs of entering the market were too high which would reduce its ability to make normal profit.

- **[Explicit costs]** There are high costs involved for Dyson to enter a new industry. Incumbents, e.g. Volkswagen, have 'ploughed tens of billions' presumably for R&D and building production plants. This is a form of high barriers to entry and hence Dyson would need to incur very high AC to overcome this barrier and it may adversely affect its profits. *[Note: students may also point to the high advertising and marketing costs to overcome the barriers to entry due to the superior brand recognition and loyalty enjoyed by incumbents]*
- **[Implicit costs]** Dyson may have also considered the high opportunity costs of entering the EV market and hence decided against doing so.
 - Dyson's main business is in appliances, e.g. vacuum cleaners. Investing immense resources to develop EVs may mean diverting physical, financial and human resources away from its main business. This could affect its ability to remain innovative and competitive in appliances. Hence, it could lose market share and incur opportunity cost in terms of lost AR in the appliances market.
- As a new entrant, Dyson would lack the internal economies of scale (iEOS) to "make the technology cheaper". Internal economies of scale are cost savings that a firm enjoys when it increases its scale of production, leading to a decrease in the cost per unit of production.

- An example of iEOS is Organisation Economies, whereby larger EV makers would be able to afford specialized departments and staff performing specific functions related to EVs. As a newer entrant to the market, Dyson would lack the scale to justify such labour specialization and their staff may have to multitask and hence perform at a lower productivity level. This causes the AC for Dyson to be higher than the incumbents, e.g. Volkswagen, which prevents them from being able to match their lower prices to compete effectively in the same market.

Factor 2: Before deciding against entering the EV market, Dyson would have considered the **benefits** of entering the market are too low and hence there is limited profits to be made.

- While "Sales of electric cars are climbing rapidly", the sales may not be rising sufficiently because taste & preferences towards EVs may take time to change hence demand for EVs may not have increased significantly to allow Dyson to make sufficient AR to make normal profits.
- The market is already saturated with competitors and hence this limits Dyson's potential market share if it were to enter the market as a new entrant. This would mean limited demand and AR to be gained for Dyson that may not allow it to even make normal profits.

Factor 3: Before deciding against entering the EV market, Dyson would have considered the **constraints** of entering the market.

- Dyson may experience a lack of appropriate technology and also the iEOS to make the 'technology cheaper'. Therefore, it would need to commit a lot of resources to R&D and this raises AC and reduces potential profit.
- Despite huge investments in R&D, it may not succeed in developing the technology to produce EVs competitively due to the lack of human resources.

Factor 4: Before deciding against entering the EV market, Dyson would have considered the **unintended consequences** of entering the market.

- If it is already producing close to or at the minimum efficient scale (MES), expansion into the EV market may cause it to reap internal diseconomies of scale.
- For example, as the size of the firm grows, it becomes difficult to manage the firm in terms of coordination, control and communication. Processes in the firm becomes more complex and rigid, and the decision-making process is likely to be slower due to excessive red tape. Consequently, the production of output could take a longer time, thereby increasing the AC and reducing the level of profits.

Note: Students may organise the points based on cost & revenue factors.

Knowledge, Application/ Understanding and Analysis		
L3	For an answer that uses analysis to explain the factors affecting Dyson's decision and at least two factors must be explained analytically to enter Level 3. <ul style="list-style-type: none"> • There must be scope in the choice of 2 factors, e.g. 'cost vs benefit/ constraints' or 'cost vs revenue'. • The analysis should be based on the economic framework of Firms & Decisions, e.g. AR/TR, AC/TC, and profits. 	8 - 10
L2	A descriptive explanation of at least 2 factors that affect Dyson's decision or an analytical explanation of 1 factor	5 - 7

L1	Knowledge of the factors affecting Dyson's decision (e.g. a largely unexplained list)	1 - 4
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Part B

Discuss the extent to which a firm's behaviour is dependent on the threat of [15] competition.

Introduction

A firm's behaviour refers to its price and output decisions, and how it engages in price and non-price competition. The threat of completion refers to the ability of rival firms to enter the market, i.e. contestability of the market.

Body

Thesis: The behaviour of a firm is dependent on the threat of competition

T1: If the market is contestable due to high threat of competition, firms are more likely to pursue entry deterrence and set a lower price (i.e. **price competition**) despite sacrificing its profits.

- Incumbent firms may be concerned about the entry of new firms that could enter the market and erode their market share. This can reduce their demand and average revenue (AR) and hence profits, ceteris paribus.
- As such, they may respond by engaging in limit pricing¹ and sacrificing its profits by charging a lower price (e.g. producing at Q_1 and charging P_1 instead of Q_e and P_e) (Figure 1). This may help to keep out new entrants as the latter may lack sufficient internal economies of scale (iEOS) to produce at similar costs and charge the same low price when maximising profits.
 - E.g. the threat of competition when the new licenses were awarded in Singapore to allow new telco operators to enter the market sparked off a price war by incumbent operators, such as Singtel and Starhub.

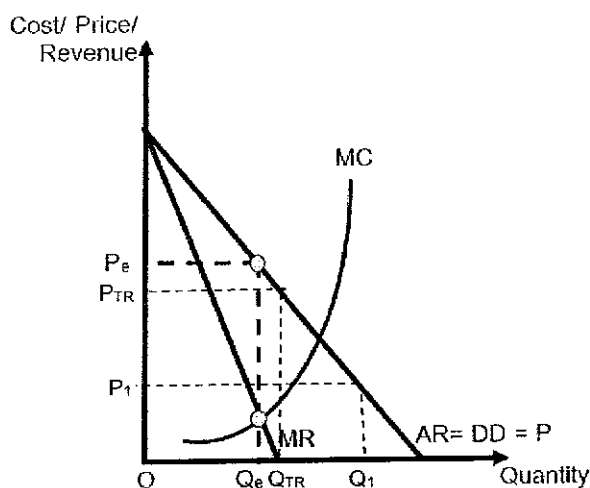


Figure 1

¹ **Limit Pricing:** When a monopolist (or oligopolist) charges a price below the short-run profit-maximising level in order to deter new entrants. It is different from **Predatory Pricing**, where a firm sets its prices below average cost in order to drive competitors out of business.

T2: If the market is contestable due to high threat of competition, firms are more likely to engage in **non-price competition**, e.g. innovation, marketing etc.

- Incumbent firms may also respond to the threat of competition by engaging in extensive marketing campaigns to influence consumers' taste and preferences and maintain the demand for its products and hence its AR.
 - E.g. airlines engage in aggressive marketing campaigns when they expect rival airlines to enter their markets and compete on the same routes.

Antithesis: Behaviour of firm is dependent on other factors (Note: many factors are provided here for students' reference but students do not need to include all of them)

AT1: Firms may have other objectives, e.g. social welfare objective, profit satisfying, revenue maximization that affect its price and output decisions (Note: The following answer explains the revenue-maximisation objective)

- Firms that employ managers to run the retail operations and allow them to decide on price and output may choose to maximise revenue by producing at output (Q_{TR}) where $MR=0$ and charge P_{TR} (Figure 1).
- This is because managers' wages tend to be commission-based and tied to the level of revenue.
- They are also divorced from cost considerations as they do not incur the AC of the firm.
 - Examples: franchise restaurants and apparel stores where the owner allows the store managers to decide on the price and output of each store.

AT2: In markets where there are issues associated with market dominance, government regulations may affect firms' price and output decisions.

- In markets where there is market dominance, e.g. oligopolistic firms, governments are likely to implement policies, e.g. regulations, to reduce the resultant allocative inefficiency
- If the government implements MC-pricing, the firm will need to produce at the socially optimal output where $P=MC$ even if they may have to make subnormal profits.
- Example: in China, there is a recent crackdown on technological giants, e.g. Didi Chuxing, Alibaba. As such, such firms may have given up on their profit-maximising objective and produce at a lower price to avoid being seen as exploiting consumers based on their market dominance.

AT3: Price and output decisions of firms may depend on the market structure that they operate in.

- In monopolistic competitive markets, there is always the threat of competition but firms are relatively independent in their price and output decisions and do not engage in price competition.
- [Counter to T1 & T2] Monopolistic competitive firms only make normal profits in the long run due to low barriers to entry. Therefore, even when there is the threat of new competitors, they are unlikely to engage in limit pricing as it would reduce their AR and cause them to make subnormal profit. They are also unlikely to engage in extensive marketing campaigns as it would increase AC and lead to subnormal profits.
- Also, due to the low barriers to entry, there is constant entry and exit of firms. Each firm also has a very small market share and hence the behaviour of each firm will have very limited impact on the entire market. As such, monopolistic competitive firms are relatively independent and do not adjust their behaviour based on the threat of competition.

- Examples: hawker centre food stalls.

AT4: Regardless of the threat of competition, monopolistic competition and oligopolistic firms tend to avoid engaging in price competition (similar to AT3 – based on market structure).

- Monopolistic competitive firms only make normal profits in the long run due to low barriers to entry. Therefore, even when there is threat of new competitors, they are unlikely to engage in limit pricing as it would reduce their AR and cause them to make subnormal profit. They are also unlikely to engage in extensive marketing campaigns as it would increase AC and lead to subnormal profits.
- Due to high barriers to entry and large firms dominating the market, there is high rival consciousness and mutual interdependence in oligopolistic markets. This could give rise in the kinked-demand model whereby firms refrain from engaging in price wars as PED is less than one when they reduce price and they will suffer a fall in TR.

Other possible points: Some firms are in markets that are completely un-contestable, e.g. natural monopolies or firms holding patents with a long time period before expiration of patents. In such cases, there is no threat of competition that will affect their behaviour.

Conclusion

Stand: I argue that the threat of competition is a significant factor affecting firms' behaviour for markets where firms have the ability to engage in price- or non-price competition, i.e. monopolies and oligopolies. However, in other market structures, e.g. monopolistic competition, firms are relatively independent and do not have the ability to engage in price and competition despite threat of competition.

Substantiation: In markets with high barriers to entry, firms typically have larger market share and incumbent firms would be more responsive to the threat of competition as potential entrants may have significant market share and their behaviour could have significant impact on the other market. On the other hand, in markets with low barriers to entry, potential entrants would likely be too small to exert significant impact on the whole market and hence incumbent firms would be less responsive to the threat of competition.

Something Special: However, when there is government intervention in markets with high barriers to entry, this will likely be the most significant factor affecting firms' behaviour due to the threat of penalties, e.g. China and even US and EU tech industries. This will not be a concern in monopolistic competitive markets where governments are less likely to intervene.

Knowledge, Application/ Understanding and Analysis		
L3	For an answer that uses appropriate analysis to explain at least two factors that affect firms' behaviour, including the threat of competition and at least one other factor <ul style="list-style-type: none"> • Factors must be linked to the economic framework of Firms & Decisions, i.e. AC/TC, AR/TR and profits. • High L3 answers (9 and above) would include some real world examples. 	8 - 10
L2	For an answer that gives a descriptive explanation of at least two factors that affect firms' behaviour, including the threat of competition and at least one other factor	5 - 7

	OR an answer that uses appropriate analysis to explain one factor that affects firms' behaviour	
L1	For an answer that shows knowledge of firms' behaviour in different market structures	1 - 4

E3	For an answer that arrives at an analytically well-reasoned evaluation of factors that affect firms' behaviour, e.g. weighing the importance of factors, evaluating critically alternative theoretical explanations, contemporary issues, perspectives, recognising unstated assumptions and evaluating their relevance.	4 - 5
E2	For an answer that makes some attempt at an evaluation of factors that affect firms' behaviour but does not explain the judgement or base it on analysis, e.g. weighing the importance of factors.	2 - 3
E1	For an answer that gives an unsupported statement to evaluate the factors that affect firms' behaviour.	1

2021 JC2 Preliminary Examination H2 Economics Paper 2
Question 4 Suggested Answers & Marking Scheme

- 4 Between 2008 and 2019, the United States went through the longest period of economic expansion, as measured by GDP, in its history. Despite this growth, the country is now experiencing its highest levels of income inequality in 50 years, worsening high-school graduation rates, and increasing prevalence of mental health conditions.

Adapted from: Channel News Asia, 29 November 2019

- (a) Explain whether growth in a country's Gross Domestic Product is an appropriate measure of how its standard of living has changed over time. [10]
- (b) Discuss whether the policies that a government may use to promote higher living standards would result in conflicts with its other economic goals. [15]

Part A

Explain whether growth in a country's Gross Domestic Product is an appropriate measure of how its standard of living has changed over time. [10]

Introduction

Standard of Living (SOL) reflects the well-being of an average person in a country. It includes material and non-material well-being. Material well-being refers to the quantity of goods and services available to the average person in a country. Non-material well-being examines the quality of life of an average person in a country. Gross Domestic Product (GDP) refers to the total money value of all final goods and services produced within the country's geographical boundary during a given period of time.

Thesis: Growth in a country's GDP is an appropriate measure of how its standard of living has changed over time

T1: Growth in a country's GDP is an appropriate measure of how a country's standard of living has changed as it could point to an increase in material standard of living

- The positive growth rates suggest that there is an increase in the amount of goods and services and hence material well-being of citizens rises.
- There is also likely an increase in household incomes with higher employment rates that allow consumers to purchase more goods and services that also improve their material standard of living.

T2: Growth in a country's GDP is an appropriate measure of how a country's standard of living has changed as it could point to an increase in non-material standard of living

- An increase in national income of an economy as demonstrated by a growth in the GDP could mean an increase in government tax revenues as households and firms pay more taxes with a rise in their incomes/ revenues. The government would then have greater ability to increase spending on areas, such as healthcare and education, that can improve qualitative aspects of standard of living.

- An increase in national income usually also points to increasing employment in an economy that promotes greater social stability that also promotes non-material standard of living

Antithesis: Growth in a country's Gross Domestic Product may not be appropriate measure of how its standard of living has changed (*Note: many points are provided here for students' reference but students do not need to include all of them*)

AT1: Growth in a country's GDP may not be an appropriate measure of how a country's standard of living has changed due to limitations in the calculation of GDP

- GDP may not be an accurate measure of changes in standard of living over time as it omits the underground economy in its measurements of national income. The underground economy consists of transactions not reported to official authorities, e.g. illegal production of goods like harmful drugs and legal activities not declared in income tax returns. This can be quite a substantial proportion of national income that is under-accounted for, e.g. close to 10% in the USA. (Other difficulties in measuring national income: e.g. estimation of values are also accepted).

AT2: Growth in a country's GDP may not be an appropriate measure of how a country's standard of living has changed as it may not account for the effects of inflation, population growth and/or income distribution (*Note: each of these points could be developed as a paragraph on its own*)

- [Accounting for population growth] Economic growth will only lead to an increase in standard of living over the same time period if the extent of economic growth exceeds the growth in population. Therefore, without data on population growth and GDP growth per capita, we cannot conclude that standard of living has improved in a country despite increases in GDP.
- [Accounting for changes in general price level] The growth in nominal GDP may be due to rises in general price level rather than the increase in amount of goods and services that households are able to consume. If the increase in general price level is greater than the growth in nominal GDP, there would be a fall in real GDP that could mean a fall in ability of households to consume goods and services. Therefore, there could be a worsening of material standard of living.
- [Accounting for changes in income distribution] When considering changes in standard of living, the distribution of national income must also be taken into account. If only a small minority benefit at the expense of the majority, the economy's overall standard of living may not have increased even if GDP increases. The economic growth is not inclusive. As such, changes in the Gini coefficient should also be considered alongside with GDP growth data.

AT3: It is insufficient to account for other aspects that could affect SOL, e.g. factors that affect non-material standard of living

- GDP does not capture the non-material aspect. An increase in the material well-being may be offset by a worsening of non-material well-being. These could be due to worsening leisure times or negative externalities.
 - An increase in national income may result from higher working hours. As a result, leisure times may fall leading to a fall in non-material well-being.

- However, an increase in national income combined with a fall in working hours (due to increase in labour productivity) would lead to increased non-material well-being.
- National income may also increase at the expense of increasing negative externalities.
 - E.g. Production of goods and services may result in pollution and the destruction of the environment that also worsen non-material standard of living. These may create economic and environmental problems for future generations. These are not captured in the national income figures, which only reflect private costs.

Knowledge, Application/ Understanding and Analysis		
L3	<p>For an answer that analytically explains how a rise in GDP could be an appropriate measure of changes in GDP and how it may not be an appropriate measure of standard of living over time.</p> <p>A good explanation of at least two reasons why growth in GDP may <u>and</u> may not be an appropriate measure of changes in a country's SOL is required to enter L3.</p>	8 - 10
L2	<p>A descriptive explanation of why GDP may or may not be an appropriate measure of a country's changes in SOL.</p> <ul style="list-style-type: none"> - Answers that only explain why GDP may or may not be an appropriate measure of a country's SOL is capped at L2 - 7 - Answers that only address material or non-material SOL are capped at L2 - 5 	5 - 7
L1	<p>Knowledge of GDP growth and SOL and/or unexplained reasons why GDP growth may OR may not be an appropriate measure of SOL changes</p>	1 - 4

Part B

Discuss whether the policies that a government may use to promote higher living standards would result in conflicts with its other economic goals. [15]

Introduction

The government's economic goals include micro- and macroeconomic goals. Microeconomic goals include: efficiency and equity. The government's macroeconomic goals include: sustainable and inclusive economic growth, low unemployment, price stability and healthy balance of trade. In this essay, I will explain how micro- and macroeconomic policies can help to promote standard of living. However, at the same time may lead to conflict with other economic goals of the government though this is not always the case.

Thesis: Policies that promote higher living standards would result in conflicts with the government's other economic goals (Note: many factors are provided here for students' reference but students do not need to include all of them)

T1: Expansionary demand-management policies that help to promote economic growth and lower unemployment to improve material SOL may lead to inflation that conflicts with the goal of price stability

- **[Mechanism of policy]** The government may use expansionary fiscal policy to promote economic growth. This involves the government increasing government expenditure and reducing direct taxes. A fall in direct taxes can increase disposable incomes and hence promote higher consumption. A fall in direct taxes can also increase the expected rate of returns for firms and promote higher investment. These can then cause an increase in AD, ceteris paribus, and multiplied increase in real national income (RNY), assuming there is spare capacity in the economy. Example:
 - Example: With the Covid-19 pandemic, many governments, e.g. the US, have introduced large stimulus packages to prevent a steep recession
 - Note: Students may also use expansionary monetary policy and exchange rate policy in this argument
- **[Linking policy to standard of living]** The increase in RNY would likely increase households' incomes and their ability to consume goods and services. This can then increase material standard of living.
- **[Explaining the conflict with other economic goals]** However, at the same time, the expansionary fiscal policy may bring about demand-pull inflation if the economy lacks spare capacity. As such, AD may increase along the intermediate range of the AS (e.g. from AD₂ to AD₃ and AD₄ in Figure 1) and cause inflationary growth (i.e. GPL increase from P₂ to P₃ and P₄) due to the competition in the economy for increasingly scarce resources. This conflicts with the government's goal of price stability.

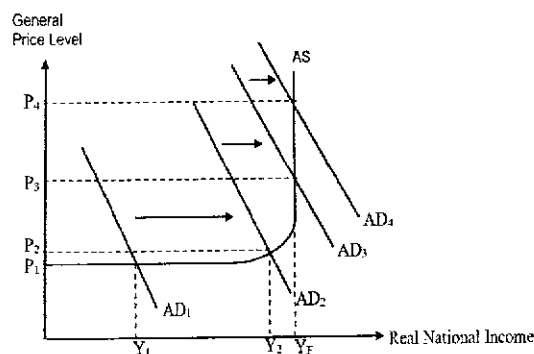


Figure 1

Note: Students may also extend the link to BOT deficit due to a rise in export prices and fall in export price competitiveness. Therefore, the pursuit of internal goals may conflict with external goals of the government .

T2: Policies to promote sustainability of growth (e.g. pollution taxes/ pollution permits/ regulations) and promote allocative efficiency may improve non-material SOL but may also negatively affect economic growth and raise unemployment.

- **[Mechanism of policy]** In addition to demand-management policies, the government may implement other measures to promote sustainability of growth. This could include policies, such as an emissions tax on producers. The tax would be valued at the marginal external cost of production and increase the marginal propensity to consume (MPC). This forces producers to internalize the third party costs and hence reduce production of polluting goods to Q_s where $MPC + \text{subsidy} = MPB$. This promotes greater sustainability as it reduces environmental degradation and resource depletion. *(Note: Students may also explain other policies, e.g. pollution permits/ regulations)*
 - Examples: Canada, Australia and the EU have introduced carbon emission taxes
- **[Linking policy to standard of living]** The reduction of the emissions helps to improve the environmental quality and hence non-material standard of living.
- **[Explaining the conflict with other economic goals]** Policies that compel firms to change their production levels and methods to adhere to environmental standards may significantly increase the cost of production of firms. This can then cause a fall in SRAS in the economy and a resultant fall in RNY (i.e. negative economic growth). This may also cause firms to reduce output and derived demand for labour. This could then lead to a rise in cyclical unemployment. Therefore, policies to promote sustainability may conflict with the goals of economic growth and low unemployment.
 - Example: Many other countries, e.g. ASEAN countries, have refrained from such taxes that could lead to macroeconomic problems.

*Note: Students should **not** use austerity as a policy to promote sustainability of growth as it is unlikely to promote higher standard of living.*

T3: Supply-side policies to promote potential economic growth could improve material SOL but also worsen inclusivity of growth and structural unemployment.

- **[Mechanism of policy]** The government may also supply-side policies to promote sustained economic growth. For example, the Singapore government has implemented policies to promote technological advancements and R&D among firms to promote potential economic growth that can increase RNY in the long term.
- **[Linking policy to standard of living]** The increase in RNY in the long term can promote improvements in material standard of living in the long term.
- **[Explaining the conflict with other economic goals]** Technological advancements may lead to greater structural unemployment as advancements, such as automation, may displace low-skilled workers. At the same time, there will be higher demand for high-skilled workers with the ability to work with technology. Therefore, there will be a mismatch of skills and low-skilled workers are unable to be employed to take on jobs require higher skillsets. This conflicts with the government's goal of low unemployment.

Antithesis: Policies that promote higher living standards may not result in conflicts with the government's other economic goals

AT1 [Counter to T1]: Expansionary demand-management policies that help to promote economic growth and lower unemployment to improve material SOL may NOT lead to inflation if the

economy has sufficient spare capacity and the government also uses supply-side policies to increase productive capacity

- **[Mechanism of policy]** Demand-management policies, e.g. expansionary monetary policies, could be used to increase AD and bring about multiplied increase in RNY.
- **[Linking policy to standard of living]** As explained, the increase in RNY can increase material standard of living.
- **[Explaining how the policy would not conflict with other economic goals]** This would not conflict with the government's goal of price stability if the economy has sufficient spare capacity such that the AD is rising along the horizontal range of the AS (e.g. from AD1 to AD2 in Figure 1 where there is minimal increase in GPL). This could be because the economy is recovering from a severe recession, e.g. when economies implement demand-management policies to promote economic recovery amidst the Covid-19 pandemic, the threat of demand-pull inflation is low. The presence of ample spare capacity could also be due to the government implementing supply-side policies, e.g. promoting training and retraining of labour using SkillsFuture credits, that ensure an increase in LRAS, potential economic growth and sufficient spare capacity such that an increase in AD would not lead to inflationary growth.

AT2 [Counter to T2]: Policies to promote sustainability of growth (e.g. pollution taxes/ pollution permits/ regulations) could improve non-material SOL and may NOT negatively affect economic growth and raise unemployment because government could provide subsidies to help firms transit to more sustainable means of production. Promotion of greener economy can also help to create new jobs and engines of growth.

- **[Mechanism of policy]** To help firms cope with the higher costs associated with greener production methods, the government may provide subsidies (as part of interventionist supply-side policies) to help firm reduce costs.
- **[Linking policy to standard of living]** The fall in firms' cost of production can help to increase SRAS, RNY and material standard of living.
- **[Explaining how the policy would not conflict with other economic goals]** Therefore, the policies to promote sustainability may also promote actual economic growth. These policies can help to correct the negative externalities due to over-production of polluting goods and hence help the government achieve its microeconomic goal of allocative efficiency. Raising environmental quality can help to attract foreign direct investments as many firms now have strict compliance standards to adhere to and would choose to invest in countries with higher environmental standards. The rise in investment could increase AD and LRAS and bring about sustained economic growth.

AT3: Policies to promote higher SOL may complement the pursuit of other goals. Supply-side policies to raise labour productivity can help to promote inclusive and sustained growth that promote higher SOL while also reducing structural unemployment and allocative inefficiencies in the labour market.

- **[Mechanism of policy]** The government may use interventionist supply-side policies to promote training and training of labour. In Singapore, Workforce Development Agency and subsidies, e.g. SkillsFuture, help to promote on-job training and re-skilling of workers. This can help raise labour productivity and reduce the cost of production of firms as firms would be able to generate higher output without expanding its manpower headcount. This can help to increase SRAS and RNY.

- **[Linking policy to standard of living]** The increase in RNY can help to increase material standard of living in the economy.
- **[Explaining the complementary economic goals]** There are many complementary goals in addition to actual economic growth and improvements in material standard of living. Raising labour productivity can also increase productive capacity in the economy, LRAS and hence promote potential economic growth. Equipping labour with relevant skills also addresses the skills mismatch of workers that cause structural unemployment. This is particularly serious for Singapore that has an aging population and a large number of senior workers in the labour force that need to be re-skilled. Therefore, the pursuit of higher standard of living through this supply-side policy can also help to promote sustained economic growth and lower unemployment. (Note: students may also link to a fall in occupational immobility in the labour markets and therefore a fall in allocative inefficiency).

Other possible points:

- Students may also explain how policies to reduce negative externalities (e.g. carbon taxes/pollution permits) can promote higher non-material standard of living and also promote sustainability in growth and reduce allocative inefficiency.

Conclusion

Stand: I argue that the policies that a government may use to promote higher living standards would not result in conflicts with its other economic goals to a large extent.

Substantiation: Due to the global recession brought about by the Covid-19 pandemic, the use of demand-management policies to promote higher standard of living is unlikely to bring about inflation due to the available spare capacity and higher unemployment in many economies. Also, many governments are running budget deficits to provide subsidies to help firms reduce their costs during this period and hence these will mitigate the effects of policies that promote sustainability on the costs of firms.

Also, along with the pandemic and need for lockdowns, reducing face-to-face contact and rise in work-from-home trends, there has been a greater push towards digitalization and the need for governments to ensure that labour are able to transit to new methods of production. As such, governments are likely to implement supply-side policies to promote training and retraining that help to promote higher standard of living and multiple other macroeconomic goals.

The analysis above assumes that there is no government failure and governments have perfect information on how to implement the various policies to promote standard of living. However, in the real world, governments have lack the information needed to implement policies effectively and promptly or they could be hampered by corruption or inefficiencies within their administration.

	Knowledge, Application/ Understanding and Analysis	
L3	For an answer that provides an analytical explanation (e.g. AD-AS framework) of how policies to promote higher SOL may and may not result in conflicts with other economic goals - Answers that only address material or non-material SOL are capped at L3 - 8	8 - 10

	<ul style="list-style-type: none"> - Answers should address at least two different economic policies to enter L3 <p>*Answers that span a variety of micro- and macroeconomic goals will receive higher credit within L3</p>	
L2	<p>For an answer that provides a descriptive explanation of how policies to promote higher SOL may and may not result in conflicts with other economic goals</p> <p>OR an answer that provides an analytical explanation (e.g. AD-AS framework) of how policies to promote higher SOL may or may not result in conflicts with other economic goals</p> <ul style="list-style-type: none"> - There is some use of economic frameworks but it may be inconsistent or inaccurate <p>Note: Analytical answers without balance would be capped at L2 - 7</p>	5 - 7
L1	For an answer that shows knowledge of economic policies, standard of living and the government's economic goals	1 - 4

E3	For an answer that arrives at an analytically well-reasoned judgement about whether policies that help to promote higher living standards would result in conflicts with its other economic goals. This analysis may also involve an evaluation of contemporary issues, perspectives and policies choices, recognition of unstated assumptions and an evaluation of their relevance.	4 - 5
E2	For an answer that makes some attempt at a judgement about whether policies that help to promote higher living standards would result in conflicts with its other economic goals but does not explain the judgement or base it on analysis.	2 - 3
E1	For an answer that gives an unsupported statement(s) about whether policies that help to promote higher living standards would result in conflicts with its other economic goals.	1

Question 5 Suggested Answers & Marking Scheme

- 5 In 2016, China's government allowed married couples to have a second child, after decades of a one child policy rule. On May 31st 2021, the government declared a further relaxation and implemented a three-child policy to help the country deal with a rapidly ageing population.
- (a) Explain why the Chinese government would be concerned with the impact of an ageing population. [10]
- (b) In light of the above concerns, discuss whether the three-child policy is the most appropriate measure in enabling China to improve her economic competitiveness. [15]

Suggested Answer for (a):

Introduction:

Many reasons can be attributed to the issue of ageing population in China. The initial government 1-child policy rule may have contributed to a falling birth rate coupled with an increase in the life expectancy that has led to a shrinking and ageing workforce. This essay will consider some reasons as to why the Chinese government would be concerned with the impact of an ageing population on the macroeconomic objectives of China.

Body:

Impact of ageing population on AS of China.

- Older workers may not be able to keep pace with technological changes and changing work requirements. Coupled with more workers retiring, where the workforce will lose a significant number of skilled workers, this would lead to a fall in the productivity of the workforce, hence LRAS may fall from LRAS₁ to LRAS₂ in Figure 1 below as quality of labour falls. This would limit potential economic growth as Y₁ falls to Y₂. Given this change in LRAS, the real national income of China may fall as well from Y₁ to Y₂.

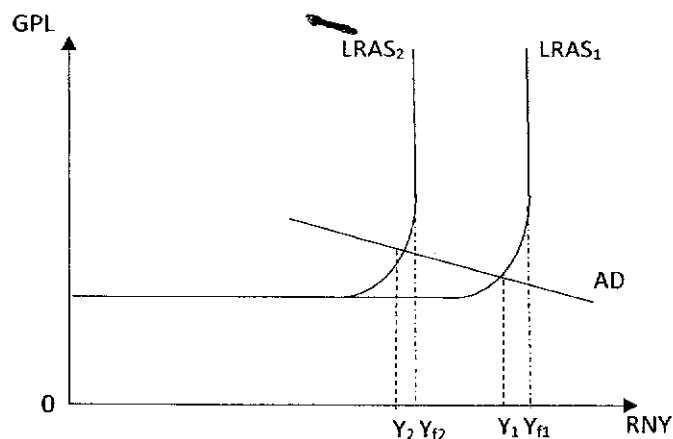


Figure 1: LRAS of China Falling

- With higher retirement figures and not enough younger people entering the workforce to replace these workers, the quantity of workforce will drop further fuelling the fall in LRAS as explained above.
- As the workforce shrinks, firms may find it difficult to find workers to fill jobs, so the lack of labour supply may lead to an increase in wages. Assuming this happens across all labour markets, this will increase the costs of production of all firms, leading to a fall in the SRAS of China from $SRAS_1$ to $SRAS_2$ as Figure 2 indicated. To cope with the rising costs of production, the firms will have to resort to raising the prices of final goods and services, contributing towards cost push inflation in the country as the general price level rises. Real national income would also fall to Y_2 , causing negative actual economic growth.

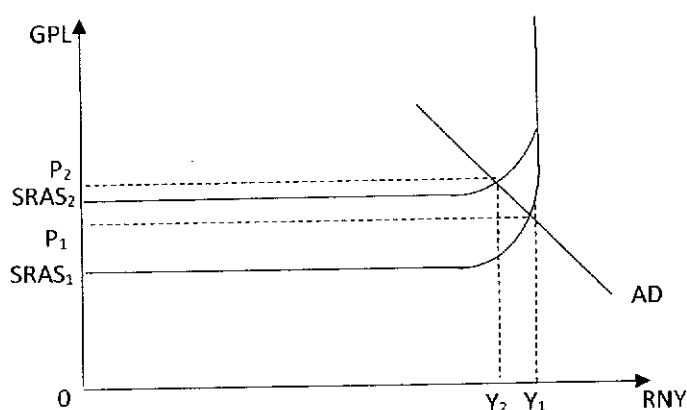


Figure 2: SRAS of China Falling

Impact of ageing population on AD of China.

- Since the rising costs of production would prompt local firms to raise the prices of final goods and services, it may in turn affect the prices of goods and services exported out of China. The rise in price of exports will in turn reduce the quantity demanded of exports more than proportionately assuming that the price elasticity of demand of exports is elastic. As a result, export revenue will fall, ceteris paribus, the balance of trade position of China will worsen and net export component of AD will fall.
- The rise in costs of production in China may also deter foreign firms from setting up production plants there. This would reduce the foreign direct investments (FDI) inflows into the country. Consequently, the investment component of AD will drop.
- As $(X - M)$ and I components drop, this will negatively affect the AD of China, shifting AD leftwards as Figure 3 shows from AD_1 to AD_2 . Real national income falls to Y_2 , causing negative actual economic growth as well as increasing cyclical unemployment in the country as firms reduced their output and the derived demand for labour falls.

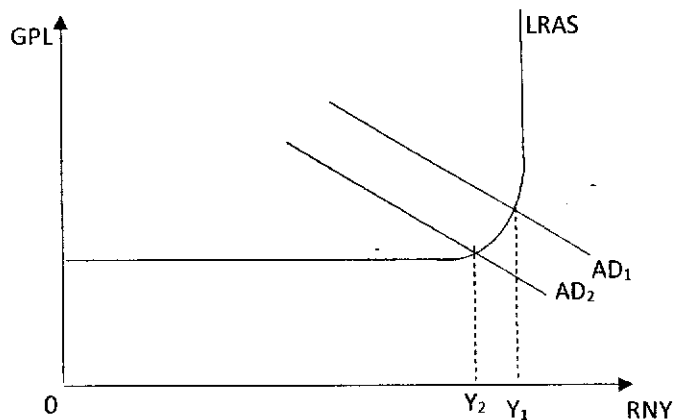


Figure 3: AD of China Falling

Note: Students can also explain impact on:

- Structural unemployment/occupational immobility (allocative inefficiency)
- Inclusivity of growth/income inequality or inequity
- Standard of living
- Price stability

Conclusion

Hence, it is more likely that the impact of an ageing population on China is negative, hence the government would need to consider policy measures to mitigate the negative consequences of an ageing population.

Suggested Mark Scheme for (a)

Knowledge, Application/Understanding and Analysis		
L3	Answer shows a thorough and complete analysis of the largely negative impacts of an ageing population in at least 2 aspects (AD vs AS & SR vs LR analysis) that is well-contextualised to China and its economy. Max L3 – 8am if no reference to China is made.	8-10
L2	Answer explains the negative impacts of an ageing population on China with deliberate links to achievement of her macroeconomic/microeconomic aims. This is however done with gaps in analysis. Max L2 – 5m if only 1 impact is sufficiently explained.	5-7
L1	Full of conceptual errors and mere listing of the impacts of ageing population without any reference to China.	1-4

(b) In light of the above concerns, discuss whether the three-child policy is most appropriate in enabling China to improve her economic competitiveness. [15]

Suggested Answer for (b):

Introduction

The Chinese government will need to make use of a combination of policies to address the issue of improving on her economic competitiveness. Economic competitiveness is defined as the level of productivity of the workforce of the country, and in turn when productivity rate falls, this will affect the country's export competitiveness negatively. Hence, this essay will consider whether the three-child policy can increase productivity of the workforce as well as export competitiveness and the need to adopt alternative policies to complement it.

Body

[Thesis: Three-child policy helps to increase the quantity of the workforce and increase LRAS of China]

Encouraging the Chinese to have more children is an example of a long run supply side policy aimed at increasing the quantity of workers in the future. This will increase the LRAS of China and with reference to figure 1, LRAS will shift rightwards from $LRAS_2$ to $LRAS_3$. This will increase her productive capacity to Y_{r1} .

It is also possible that with an increase in the quantity of workers in the workforce, the supply of workers will increase, and this will help to cope with any excess demand of workers in the labour market. As the supply of labour increase across the economy, wages can be depressed or kept from rising, lowering costs of production. SRAS rises and firms will now find it easier to reduce the prices of their final goods and services. Again lower prices means China's export competitiveness will improve since price of China-made goods/services are lower relative to other countries.

[Anti-thesis 1: Three-child policy has its limitations and is insufficient in addressing China's economic competitiveness]

Some limitations of the policy also include whether the policy is fully effective given that this is entirely voluntary and many parents may find it hard to cope with the added financial strain of having more children. Hence this may limit the success of the policy. Furthermore, the policy alone is insufficient as it does not directly address the issue of low productivity and export competitiveness.

[Anti-thesis 2: Suggest alternative of using long run interventionist supply-side policy of offering training and education opportunities to workers to increase productivity]

An alternative policy that can address the root cause would be via the government offering opportunities for higher education and re-training of workers. This is another form of long run interventionist supply-side policy aimed specifically to increase the productivity of the workforce. The Chinese government may take reference from the Singapore context such as the offering of Skillsfuture credits to her citizens, which is a form of monetary incentive given so as to encourage workers to take up new skills. Furthermore, the government could offer incentives to firms to encourage them to adopt more capital intensive and highly efficient production processes. The focus on capital intensive methods of production complements and encourages productivity in the

workplace. Hence workers may also be motivated to take up further training in order to stay relevant.

As the productivity rate of China's workforce increases, it may help to lower costs of production, allowing firms to lower the prices of their final goods and services, in turn improving on the country's export competitiveness. Furthermore, foreign firms will once again be attracted to invest in the country. These firms may bring in new technology to share with domestic firms, enhancing the quantity of capital and capital efficiency of the country, LRAS rises and Y_f increases.

A limitation of such a policy would be the training costs and various subsidies government will have to fund which would deprive another area of funding such as in healthcare. The policy also suffers from implementation time lag as workers will need time to be re-trained.

[Anti-thesis 3: Suggest alternative policy of using exchange rates to increase export competitiveness]

An alternative policy that can address the issue of losing export competitiveness is the use of exchange rate policy. China adopts a fixed exchange rate regime and will need to ensure that the exchange rate is not pegged too high in order to maintain or improve on her export competitiveness. She may devalue the yuan by selling yuan in the forex as this will lower the value of the yuan, resulting in a fall in the price of Chinese exports relative to the rest of the world, hence maintain export price competitiveness. This is a quick and easy policy to implement where results can be seen fairly quickly.

A limitation of this policy is the possibility of backlash from other countries. Prominent countries such as USA has accused China of under-valuing the yuan to make her exports cheaper. In retaliation, USA has slapped tariffs and other restrictions on many Chinese exports to the country.

Conclusion:

Stand: I believe that adopting the three-child policy alone is insufficient in addressing the issues China is facing with her economic competitiveness. There is a need to support the policy with a combination of both supply-side and demand-side policies to better address the issues.

Substantiate: I recommend the use of training and education schemes together with a focus on building the capital efficiency of China in order to increase the productivity rate of the country directly. This policy can be implemented in China via her more affluent provinces first as there is existing available infrastructure and resources to support the initiative.

China is in the early stages of an ageing and shrinking population and the government is already taking steps pre-emptively. Coupled with an efficient government and sound existing processes, it is likely that China will see a growth in her birth rates.

Suggested Mark Scheme for (b):

	Knowledge, Application/Understanding and Analysis	
L3	Answer explained the benefits and costs of three-child policy in achieving economic competitiveness with inclusion of two alternative policies for breadth of	8 - 10

	answer. Good link as to how policies achieves economic competitiveness or not. Contextualised to a large economy like China.	
L2	Answer provided an under-developed explanation of the 3-child policy with some explanation to one alternative policy. Contextualised to a large economy like China but lacking in the depth.	5 - 7
L1	Answer vaguely provides some understanding of the 3-child policy with weak and incidental attempts at linking to economic competitiveness of China.	1 - 4
E3	Good attempt to provide well-reasoned evaluation/opinions, supported with clear explanation/evidence on the overall extent. Comparison across policies is evident with reference to China context.	4 - 5
E2	Some attempt to provide synthesis/conclusion but lack clear substantiation/elaboration.	2 - 3
E1	Listing of opinion/conclusion, without any substantiation.	1