Anderson Serangoon Junior College
2023 JC2 Preliminary Examination H2 Economics 9570/01
Suggested Answers and Marker's Comments

Question 1: Big technology firms and the COVID-19 pandemic

(a) **Compare the changes between Amazon's sales revenue and profit and suggest a reason for the difference.** **[3]**

Amazon's sales revenue and profit are increasing but its revenue is increasing to a much larger extent than its profit.

A reason for the larger increase in revenue could be that Amazon is increasing its spending on R&D and/or logistics infrastructure to make its delivery services more efficient. Thus, with increased spending (ie costs), the profit that remains is much lower.

(b) **Extract 1 states that "Families bought iPads and Macs as work and school went virtual."**

Using a diagram, explain how this impacted consumer and producer surplus in the technology market. **[5]**

Extract 1 states that there is an increase in the demand for products in the technology market. This was a result of the pandemic that resulted in lockdowns in several countries. Since people stayed home more, they were more inclined to purchasing electronics like laptops and electronic notepads that enabled them to work from home or to attend lessons virtually. This increase in taste and preference increased the demand for technological products. This is illustrated by the rightward shift in the demand curve from D_0 to D_1 as seen in the diagram below.

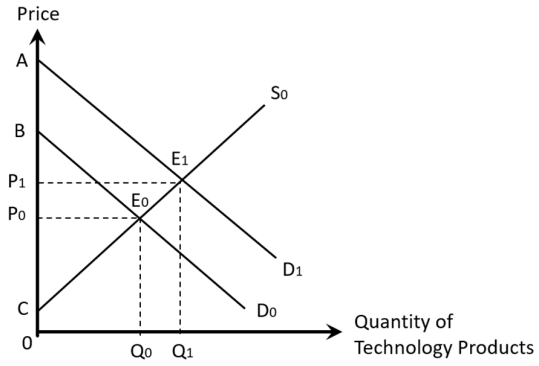


Figure 1: Market for Technology Products

At the original price, P_0, a shortage is created and this causes an upward pressure on price since consumers who were initially unable to obtain the products now bid up prices. The subsequent increase in quantity supplied and fall in quantity demanded will continue until the market reaches a new equilibrium. Thus, both equilibrium price and quantity have increased from P_0 to P_1 and from Q_0 to Q_1 respectively.

As seen in the diagram, the increase in demand will lead to an increase in consumer surplus (from area BE_0P_0 to area AE_1P_1) and producer surplus (from area CP_0E_0 to area CP_1E_1)

(c) **With reference to Extract 2, explain the likely PED value of Amazon's e-commerce service.** **[2]**

The PED value for Amazon's e-commerce services is likely to be less than 1. This is because there are few close substitutes. Extract 2 states that "you know when you will likely receive a product" when you place an order with Amazon. In contrast, other delivery websites provide no such certainty. Thus, this makes Amazon's delivery services less substitutable.

(d) **Explain a barrier to entry that exists in the industry that Amazon operates in.** **[2]**

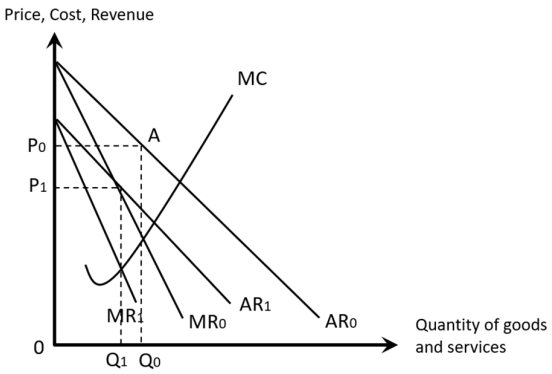
A likely barrier to entry in the delivery market is technical barrier to entry. Given the need to build up a delivery fleet and warehouses with the machinery to sort and transport goods. A large fixed cost is needed to be able to set up such a complex logistics infrastructure. This is likely to prevent firms from easily entering the market.

(e) **Extract 3 states that "firms that survived the COVID-19 crisis are older with greater brand loyalty and more productive."**

Discuss the validity of the statement. **[8]**

During the Covid-19 crisis, many firms faced a fall in demand for their goods and services due to falling incomes and lockdowns that took place in many countries. While it is true to some extent that older and more productive firms had a greater likelihood of surviving this, or in other words, not shutting down, it is not a guarantee that such firms would not shut down. The shut down condition for a firm is at an output level where average variable cost (AVC) is more than average revenue (AR).

Firms that are older do have a greater ability to survive the Covid-19 crisis. Firms that are older tended to be firms with a greater level of brand loyalty from their consumers. The COVID-19 crisis would cause a fall in demand for firms' goods and service. This is seen in the diagram below where the firm's demand shifts from AR_0 to AR_1. However, given the brand loyalty that older firms enjoy, it is likely that their fall in demand will be less than the fall to AR_1, which is likely to be less than other firms because consumers may continue to purchase from them rather than from the newer entrants into the market. For example, when it comes to home furnishing, Ikea has established itself for many years in the market and when consumers think about furnishing their homes to make it more conducive for working from home, they are more likely to purchase goods from Ikea than other firms.



Given the likely smaller fall in average revenue, it is unlikely that the older firms like Ikea would reach the shut-down condition. Furthermore, Ikea is a large firm that has established itself for many years in the market. Thus, it is likely to have past profits to tide over periods of crises and not need to shut down even if it faces a fall in average revenue.

Also, firms that are more productive are more likely to be producing close to or at productive efficient levels. Thus, this enables them to lower their cost of production and thus they are less likely to shut down since they would lower their average variable costs as well. If firms are suffering from X-inefficiency prior to the COVID-19 crisis and are unable to get rid of their organisational slack, then such firms will have a greater likelihood of having a fall in AR such that it can go below the AVC.

However, it is not necessarily true that older and more productive firms are the only ones that can survive the pandemic. Firms that may not be old or more productive can also survive the pandemic. As stated in Extract 3, firms that can adapt to the changing market conditions and adopt technologies that help them adapt are also able to avoid shut down. This is not dependent on the firm's age and productivity. For example, when pubs faced a loss in revenue due to lockdowns preventing consumers from patronising their premises, those that were able to pivot and change their production of alcoholic drinks to producing hand sanitizers were best able to find alternative sources of revenue and even increase their average revenue. This would enable them to avoid a shut-down situation since they avoided loss of revenue.

In conclusion, there is some truth that being older may help maintain revenue and thus enable a firm to avoid shut down. However, this is not always the case. This is seen in the case of Robinsons that shut down in Singapore even though it had stores in Singapore for decades. This is because the more critical issue is the ability of the firm to adapt to the changing circumstance brought about by the pandemic which required firms to be able to move their sales online and still be able to maintain their consumer base. While Robinsons may have had some past profits to keep them afloat, this only served to delay their eventual shutting down. Thus, being older only provides a limited ability to avoid shut down.

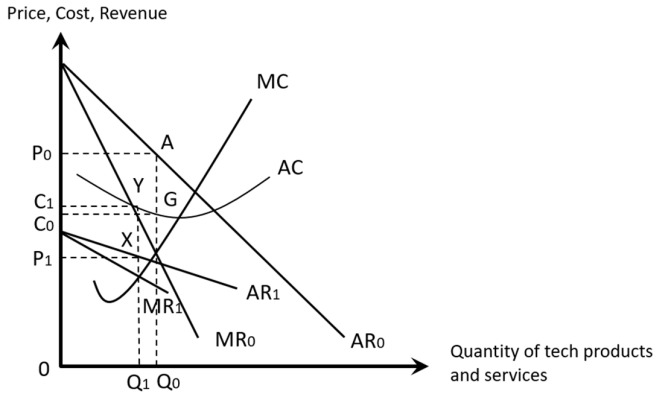
That said, it is likely that it is critical for a firm to be productive to be able to avoid shut down during a pandemic. If a firm is unable to keep its costs low, it is more likely for the average revenue to be below average variable costs, especially in a period of falling revenue.

Level	Marks	Description
2	4-6	Analytical explanation of the benefits of both being older (having more brand loyalty and thus likely being larger as well) and more productive. Answer needs to link to the ability to survive and have analysis of the shut-down condition.
1	1-3	Under-developed description of benefits of being older and more productive. Only one aspect analysed. Shut-down condition not analyzed or limited analysis.
EV	1-2	Evaluation marks will be awarded for evaluative comment on whether being older and more productive really will enable a firm to better survive.

(f) **Using Extract 4, discuss the appropriateness of EU's proposals to increase competition and the establishment of regulatory standards in curbing the negative impacts of the dominance seen in the technology market. [10]**

The technology market has been dominated by firms such as Google, Apple and Facebook (Extract 4). With such market dominance, it is likely that the market will experience negative impacts such as allocative inefficiency, a possible lack of dynamic efficiency and subsequently, lowered consumer welfare in terms of higher prices, lowered quality of products and limited variety. Thus, the EU's proposals seek to curb such negative impacts.

Firstly, the EU seeks to reduce the negative impact of the dominance in the technology market through liberalisation of the market. Through the "framework of basic rules" that firms are required to abide by (Extract 4), it will result in reduction of barriers to entry. The demand of dominant firms like Google and Apple will thus fall, causing their AR curve to shift left and this enables price to fall. This is seen in the diagram below, where AR_0 shifts to AR_1 and pivots to be gentler because the firm's demand is now more price elastic.



Price will fall from P_0 to P_1. As such, this will lead to increased consumer welfare because of lowered prices. This also allows for firms to be less allocative inefficient as the gap between price and marginal cost is now smaller.

Furthermore, prices will be further reduced because firms can no longer be as complacent and now are incentivised to be more productively efficient. Thus, the greater efficiency in production will lead to lowered costs and this can also be passed on to consumers in terms of lowered prices.

However, a possible limitation of such a policy is that there may be limits on dynamic efficiency as firms may lose out on profits needed to conduct research and development that is needed to achieve product innovation. This is especially the case in the technology market where firms are constantly exploring new digital products. Thus, this can place limits on consumer choice and variety in products, lowering consumer welfare.

Firms may also be unable to enjoy economies of scale since they are now unable to produce as large an output as before. Thus, it means that prices may not be able to be kept as low as before and consumer welfare will suffer.

The Digital Services Act (DSA) and Digital Markets Act (DMA) also serves to curb the negative impacts of the dominance. Laws are enacted to ensure that hate speech is removed and illegal goods cannot be sold online and penalties imposed on firms that do not comply. This limits the profits that technology firms can enjoy since they are no longer

able to profit from such activities and it also increases the quality of the digital services being consumed since consumers no longer need to be worried about encountering the sale of illegal goods and parents do not have to be as worried about their children encountering negative content because algorithms are less inclined to push out such content. This helps to improve consumer welfare.

However, having too many restrictions on what firms can do with their algorithms can limit innovation. As mentioned in Extract 4, it can be harder to develop new products and such laws create disincentives for R&D. This would compromise consumer welfare because of a lack of variety and quality of online services/products.

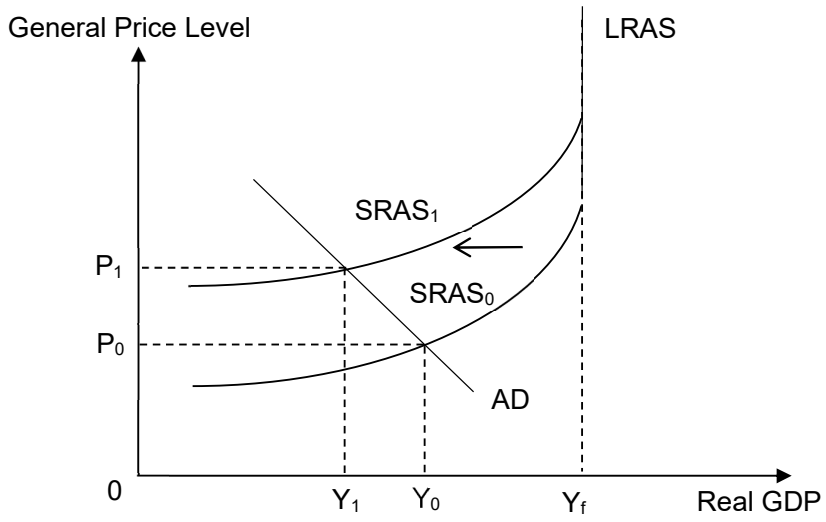
In conclusion, EU's proposals are appropriate as it is likely that the regulations will improve consumer welfare and allocative and productive efficiency and outweigh the limitations in terms of loss of dynamic efficiency. This is because the dominance of the big technology firms is so great (for example, Google controlling 87% of the global search market) and the brand loyalty created so strong that the laws are unlikely to have a very detrimental effect on the firm's market demand and thus profits. Thus, any profit or loss is unlikely to hurt the technology firm's ability to continue to conduct R&D. Furthermore, the loss of economies of scale is also unlikely to be felt very strongly because of the said brand loyalty that these firms enjoy.

That said, it is possible that the laws enacted by the EU may be insufficient to curb the negative effects of the dominance by the technology firms because the firms may continue to be dominant because of the brand loyalty formed and the barriers to entry created. Thus, the EU may have to find more ways to further lower the barriers to entry to enable other technology firms to enter the market.

Level	Marks	Description
2	4-7	Analytical explanation of both the increase in competition and establishment of regulatory standards linking to how it curbs the negative effects of dominance.
1	1-3	Under-developed explanation of only 1 policy and weak links to how it curbs the negative effects of the dominance.
EV	1-3	Evaluation marks will be awarded for evaluative comment on the appropriateness of the given policies.

Question 2: Emerging from the COVID-19 pandemic

(a)	**(i)**	**Define Consumer Price Index and compare the changes in the cost of living between Indonesia and Singapore from 2018 and 2021 as shown in Table 1.**	**[3]**
		The consumer price index measures the average price changes of a fixed basket of goods and services commonly purchased by resident households over time. Cost of living in Indonesia increased throughout as shown by the positive percentage change in CPI while cost of living in Singapore fell in 2020 but registered increases in the other years.	
	(ii)	**With reference to Table 1 and 2, suggest how the overall inflation rate in Singapore was possible in 2021, despite a fall in prices of clothing and footwear, and other miscellaneous goods and services.**	**[2]**
		Inflation rate in Singapore had increased in 2021. This was possible despite a fall in the prices of clothing and footwear and other miscellaneous goods and services because other categories of items in the basket of goods and services might have registered increases in price. Furthermore, these other categories have larger weights than the weights for clothing and footwear and other miscellaneous goods and services, at the lowest 2.1% and 4.8% respectively.	
	(iii)	**Explain how the data in Table 1 might be used to compare the standard of living between Indonesia and Singapore in 2021.**	**[3]**
		Table 2 shows data on GDP per head (US$) of both countries. GDP is the total money value of all final goods and services produced within a country's geographical boundary during a given period of time. GDP per head goes one step further by dividing the GDP by the population of the country. As population size across countries will vary, it is important to account for the difference in population sizes when determining differences in standard of living. Furthermore, the GDP per head data was measured in constant 2015 US$, indicating that it has already been adjusted for inflation and difference in exchange rates. Based on data in Table 2, GDP per capita in Singapore was approximately 17 times of Indonesia's in 2021. This shows that Singapore's GDP per capita was much larger than Indonesia's, which indicates that on average, residents in Singapore had a higher purchasing power and were more able to purchase goods and services. This means that the average material standard of living of each resident in Singapore was higher than each resident in Indonesia. Table 2 also provides life expectancy data for both countries. Since Singapore's life expectancy is at 83 years while Indonesia's is at 68 years, we can infer that in terms of healthcare, residents in Singapore have access to better healthcare goods and services and hence enjoyed better quality of life, compared to the Indonesians. This would mean that	

		the non-material standard of living may be higher in Singapore than Indonesia.	
(b)	**Explain how Indonesia's export ban on palm oil could cause a rise in inflation in Singapore.**		**[4]**
	Extract 6 states that palm oil is a common ingredient in cosmetic and household items, and that Singapore gets most of its palm oil from Indonesia. Furthermore, Indonesia is the world's largest producer of palm oil. With the export ban, there will be global shortage which will drive up prices of palm oil. Singapore will have to source for and import palm oil from other countries, possibly at a higher price. This will drive up the cost of production. Profit-motivated producers would be less willing and able to produce, causing a fall in the short run aggregate supply (SRAS). This is illustrated in the diagram below where there is a leftward shift of the short run aggregate supply curve from $SRAS_0$ to $SRAS_1$ as firms reduce production due to rising costs of production. The resultant shortage of goods and services leads to an increase in the general price level from P_0 to P_1, leading to cost-push inflation in Singapore.  	
(c)	**With reference to Extract 6, discuss whether Indonesia should continue to specialise and trade in palm oil, or continue with its export ban.**		**[8]**
	R1: Indonesia should continue to specialise and export palm oil, for which it has a comparative advantage in. Due to Indonesia's factor endowment of vast amounts of land and rainforest, it has a comparative advantage in the production of palm oil. A country is said to have comparative advantage in the production of a good if it can produce that good at a lower opportunity cost than another country. Based on the theory of comparative advantage, specialisation in the production of goods in which a country has comparative advantage in, and engaging in trade with other countries with CA in different goods is mutually beneficial when opportunity costs of producing the goods differ between countries.		

Extract 6 states that "palm oil production is vital to the economy of Indonesia" and that the country earned a substantial US$28 billion from its export of palm oil.

Indonesia is the world's largest exporter of palm oil, and export revenue from palm oil makes up 11% of its total export earnings. By specialising in the production of palm oil which it has a CA in and producing for the world, Indonesia's firms are able to reap economies of scale and enjoy a lowering of average costs. Thus its exports of palm oil are more price competitive than other producers, enabling it to earn significant export revenue, contributing to **economic growth** and **employment**.

R2: Reasons for continuing with the ban

Self-sufficiency – Eliminate shortage to curb rising prices

Extract 6 states that Indonesia was facing shortage of palm oil domestically, which had driven up prices and cost of living. Palm oil is used to produce essential items such as food and cooking oil and a rise in prices of such goods would create greater inequity if the lower-income households are unable to afford such **essential** items. Thus the export ban helps to ensure enough supplies for domestic consumption and curb the rising prices to **bring down cost of living** and **improve equity** in the country.

Quell protests and achieve greater political stability which might otherwise deter FDI and economic growth

Curbing the rising prices would also help to reduce protests in the country, which had arisen due to the cooking oil shortage and high prices. Quelling the protests would achieve greater political stability in the country, which is important in attracting foreign direct investment to bring about actual and potential growth for the economy. Increase in FDI would increase AD and bring about multiplied increase in real national income. The transfer of technology and capital would also increase the productive capacity of the economy and increase LRAS, increasing the level of maximum potential output and helping Indonesia achieve **sustained economic growth**.

[Other acceptable reasons: Lowering of COP and increase in SRAS leading to fall in cost-push inflation and rise in actual growth]

The export ban would mean there is increase in the supply of palm oil in the domestic market. This would reduce the prices of palm oil domestically. Producers which use palm oil as a factor input would benefit from the lower cost of production. They would be more willing and able to increase production, and this would lead to an increase in SRAS. The resultant surplus would lower general price level and bring down cost-push inflation. Furthermore, as SRAS increase, there is increase in real national output and increase in actual growth.

Conclusion

Ban should only be a very short-term and temporary measure as the costs clearly outweighs the reasons for it. Given that Indonesia is the world's top exporter, export earnings from sale of palm oil is a significant source of export revenue for Indonesia. A ban on exports would reduce its export revenue very significantly. Given the importance of the palm oil sector to its economy, this would significantly reduce the **aggregate demand** of Indonesia which would have negative impact on its **economic growth** and **employment**.

Furthermore, Extract 6 states that the ban could "result in unsold harvests for farmers" and that "Indonesian producers will run out of storage capacity to store

oil that they can no longer export." If the government subsidise some of the storage costs, it would be a strain on their **budget**.

Thus, Indonesia should continue to specialise and export its palm oil and stop the ban. Furthermore instead of a ban, Indonesia should look for longer-term solutions to reform its palm oil sector so that prices are not controlled by the dominant firms, which have the tendency to set much higher prices, making it too expensive for the locals.

Level	Marks	Description
2	4-6	Analytical explanation of the benefits of both courses of action on the Indonesia economy.
1	1-3	Under-developed description of reasons to continue to specialise and trade as well as reasons to continue with the ban, or just one course of action explained
EV	1-2	Evaluation marks will be awarded for evaluative comment on the action that the Indonesia government should take.

(d) **Singapore is expanding its network of free trade agreements for greater diversification.** **[10]**

Discuss whether the above policy is the most effective option for the Singapore government to deal with the higher cost of living.

R1: Explain how free trade agreements can help to reduce cost of living, and its limitations in doing so.

Free trade agreements (FTA) are treaties between two or more countries designed to reduce or eliminate barriers to trade and investment, and to facilitate stronger trade and commercial ties between participating countries.

Singapore had signed the Regional Comprehensive Economic Partnership (RCEP) and Extract 7 states that the RCEP enables firms to "more optimally source raw materials and intermediate inputs from member countries". This means that Singapore will be able to source for cheaper factors of production and food products from more countries, leading to fall in cost of production. Producers would be more willing and able to supply, leading to increase in SRAS and the resultant surplus will bring down general price level and lower cost-push inflation.

As a small and open economy with no natural resources, Singapore is heavily dependent on imported factors of production as well as final good and services. Singapore imports more than 90% of its food, and its imports of goods and services as a percentage of GDP was 150% in 2022. Thus, the ability to source for wider and cheaper range of imports would help Singapore diversify and reduce imported inflation greatly, especially essential items such as food and medical supplies. Since cost of living refers to prices of essential goods and services, or the amount of money needed to cover basic expenses such as housing and food, a fall in the general price level, including prices of food and medical supplies, will help to reduce the cost of living in Singapore.

Furthermore, Extract 7 states that participation in the RCEP will also bring about greater integration of economies in the ASEAN region in terms of trade in goods and services as well as foreign direct investment (FDI) as member nations are able to 'invest in fellow RCEP countries without having to meet conditional performance requirements'.

With an increase in FDI, an economy's AD increases. In addition, the likely accumulation of capital assets with FDI as well as transfer of new ideas and technology will likely enhance an economy's productive capacity. This will increase the long run aggregate supply, helping to ease inflationary pressure.

However, there are certain limitations. In the event of a global shortage of particular factor of production, even with the signing of more FTAs, it will still be difficult to obtain the supplies. And in the case of palm oil where Indonesia is clearly the world's largest supplier and other suppliers are a distant second or third, the FTAs would do little to fill the shortage and thus Singapore would still face higher imported cost-push inflation.

[Can also explain the possibility of DD-pull inflation which will increase the cost of living further as a limitation]

Intermediate EV

For most other countries, when they sign FTAs for the removal of tariffs on exports and imports, the cost savings from removal of import tariffs will significantly reduce the cost of production for domestic producers. For example, if the US was to remove import tariffs on steel from China, then the domestic automobile producers in the US would be able to import steel from China at a lower cost and thus enjoy lower cost of production which they can pass on to consumers and lower cost of living. However, Singapore does not reap this aspect of direct benefits from FTAs. Singapore advocates free trade and does not impose tariffs on almost all imports, except for liquor, tobacco, petroleum products and motor vehicles. Thus the removal of tariffs aspect of free trade does not help to reduce cost of living directly in a significant way as Singapore does not tax almost all imports in the first place. The benefits to Singapore from the expansion of network of FTAs come mainly from helping Singapore diversify its sources of imports, and from gaining access to more markets for its exports, bringing about economic growth and employment.

R2: Explain how appreciation works to reduce imported cost-push inflation and hence cost of living, and its limitations in doing so.

Appreciation leads to fall in the price of imports. As a small and open economy that lacks natural resources, Singapore is heavily dependent on imported factors of production as well as imported final goods and services. Thus appreciation would lower the price of imported FOPs which would reduce the cost of production. Profit-motivated producers would be more willing and able to increase the short run aggregate supply. As firms increase production, there will be surplus created which will exert a downward pressure on GPL and lower imported cost push inflation. Firms pass on cost-savings to consumers, helping to reduce the overall prices of goods and services and lowering the cost of living.

Appreciation would also lower the price of imported food and other essential items directly, helping to manage the rising cost of living.

However, appreciation of SGD reduces the competitiveness of Singapore's exports and could cause a fall in net export revenue. Appreciation leads to a rise in foreign price of exports and a fall in the domestic price of imports. This leads to a fall in the quantity demanded for Singapore's exports and rise in quantity demanded for imports. Since the Marshall-Lerner condition is likely to hold, where the sum of the price elasticity of demand for exports and price elasticity of demand for imports is greater than 1, as there are substitutes for Singapore's exports, appreciation would lead to a fall in net exports and consequently fall in AD. The fall in income and loss of jobs would add to the difficulty of households to cope with the higher cost of living.

Intermediate EV

Therefore the rate of appreciation needs to be gradual and moderate so as not to cause significant loss in exports price competitiveness and set back Singapore's economic recovery. Furthermore, the lowering of cost-push inflation also helps to partly offset the loss in price competitiveness from the appreciation of the SGD. In addition, Singapore's export competitiveness does not solely lie in price competitiveness but is in fact more in terms of non-price competitiveness such as the focus on quality and more high-tech products.

Alternative Policy 2: Transfer payments to support lower-income families
(but less scope for economic analysis)

The Singapore government could also provide targeted fiscal support to help lower-income families cope with the higher cost of living, Singapore government can give out transfer payments which are payments made to the poorest and most vulnerable members of society, but there is no exchange of any good or service. Through these transfer payments such as the cash vouchers, it helps to increase the disposable income and increase the purchasing power of the lower income households. The income transfers will help households defray their daily expenses and have the effect of tempering the cost of living increases faced by them. As such, these households will then be able to have better access to the basic necessities, helping them cope with the higher cost of living,

However, such transfer payments are a strain on the government budget and cannot be sustained over the long term. In fact, the Singapore government had tapped heavily into its past reserves to push out various support packages to help firms and households cope with the impact of the COVID-19 pandemic. For fiscal sustainability, the scale of such transfer payments cannot be a permanent feature of the government's fiscal spending. There will also be opportunity costs incurred where development of other areas would be forgone.

Conclusion

In conclusion, given Singapore's heavy dependence on imports, appreciation of the SGD rather than expanding its network of FTAs is the most direct way to manage the rise in cost of living as it directly reduces the price of imported factors of production and final goods and services.

However, Singapore's lack of resources also necessitates diversification of import sources for lower prices and importantly, for sufficiency. Hence both options of FTAs and appreciation of SGD must be implemented hand in hand to deal with the higher cost of living.

Beyond managing cost of living through controlling prices, the Singapore government should also implement policies that will help Singapore become more productive and competitive for sustained economic growth and also uplift the skills and income of the lower-skilled and lower-wage workers so that they have greater ability to cope with the higher cost of living.

Level	Marks	Description
2	4-7	Analytical explanation of at least 2 policies to deal with the higher cost of living and the limitations of both policies in achieving that.
1	1-3	Under-developed explanation of 1 policy to deal with the higher cost of living and the limitations of the policy in achieving that.
EV	1-3	Evaluation marks will be awarded for evaluative comment on which is the best policy.