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

ECONOMICS   9757/01

Paper 1   Case Study   16 September 2022

                                                        2 hours 15 minutes

Additional Materials: Answer Booklet

READ THESE INSTRUCTIONS FIRST

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

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

<u>For each Answer Booklet:</u>
Write your name, Centre number and index number on the first page of all Answer Booklets that you hand in. Write clearly and use capital letters.

For each booklet, use both sides of the paper.
Write in dark blue or black pen. HB pencil may be used for graphs and diagrams only.

DO **NOT** WRITE ON ANY BARCODES.

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

Question	Part	
1	ai	
1	aii	

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

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

This document consists of **8** printed pages.

[Turn over]

2

Answer **all** questions.

Question 1: Rising prices in the medical sector

Table 1: World Price of Meltblown per 1000 kg (US$)

	Jan	Feb	Mar
2020	948	1058	1047
2021	1626	2276	2734

Source: *Statista*, January 2022

Extract 1: Rise in price of meltblown and masks

The COVID-19 pandemic has resulted in the elevation of masks as an increasingly important form of medical protection. Projecting into the next year, the intensifying pandemic is likely to compound the rise in price.

Yet, manufacturers are already struggling to supply the demand for masks. This is really about a global shortage of one particular plastic inside the masks – a type of non-woven polypropylene that acts as a filter. People in the mask business call the plastic "meltblown", referring to how its plastic filaments are made. Meltblown goes into many things: jackets, nappies, filters in water purifiers and air conditioners. Meltblown is in short supply not because they're difficult to produce, but because the meltblown industry is used to stable, long-term demand. With demand now soaring due to the heightened importance of masks, some companies are already running at full capacity and require more equipment to increase production, yet suppliers of meltblown equipment are quoting timelines of up to two years to even deliver a new machine.

For some economists, higher prices are a sign of a properly functioning market. It is the market's way of screaming: We need more masks! The normal economic view is that prices should be left free to make supply and demand equal. At this moment, the Centers for Disease Control and Prevention (CDC) only recommends masks for medical professionals, and hospitals are running out. Those in the medical field are the ones willing to pay the most, and higher prices might cut down on frivolous buying by the general public. Higher prices are also a signal to manufacturers to make more masks. However, there are obviously downsides to higher prices. Merchants are profiteering on fear, and higher prices mean only the more affluent can afford masks. There is a genuine, legitimate fairness concern. "I have always thought that economists were obsessed with efficiency, no matter what happened to distribution," said Angus Deaton, a Nobel-winning economist, "But distribution is what matters, particularly in an emergency."

Solving this requires steering the market in ways that classical economists tend to dislike. One strategy is to cap prices so that they don't become exorbitant but still offer the kind of profits that draw new manufacturers in. However, setting a ceiling on mask prices may add to the problem. If prices are kept artificially low, not enough masks are produced in the market.

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Source: *NPR*, 3 March 2020 and *The Guardian*, 28 April 2020

Extract 2: Businesses pivot in face of the pandemic

As the pandemic spreads in the US, the shortages of masks could get even worse. So manufacturers are retooling factories to soften huge blows to their usual lines of business. Gap Inc., a major US clothing retailer, said this week that it would shift its factories to making cloth masks. In Singapore, gaming company Razer announced plans to set up an automated mask manufacturing line within 30 days to produce "a couple of million certified masks" each month.

Brian Hahn, chief operating officer of electronics accessory producer Nomad, says they are working closely with Nomad's factories in China to shift production from accessories like Apple AirPod cases to masks. That has included installing some new machines, but Hahn says the transition has been a relatively easy one since they are essentially the same kind of machines but with a few additional machine parts that can be easily sourced. That contrasts with the complex and slow process of starting new production of ventilators, also in high demand for treating critically ill COVID-19 patients.

Source: *Fortune*, 26 March 2020 and *ChannelNewsAsia*, 1 April 2020

Extract 3: Excessive pharmaceutical drug prices in the US

Excessive drug prices are the single biggest category of healthcare overspending in the US. And unlike almost every other product, pharmaceutical drug prices continue to rapidly rise over time. Health and Human Services estimates that over the next decade, pharmaceutical drug prices will rise 6.3 percent each year, while other healthcare costs will rise 5.5 percent. Basic economic principles suggest that pharmaceutical drug prices should be going down because manufacturing volumes are increasing, and little new research and development (R&D) is being conducted. Yet, a simple market research on existing pharmaceutical drug prices proves otherwise.

To be more precise, after accounting for the costs of all R&D amounting to roughly $80 billion a year, pharmaceutical companies had $40 billion more from the top 20 pharmaceutical drugs alone, most of which went straight to profits instead of research. The remaining money goes to sales and advertising. Amongst the few largest pharmaceutical companies which command more than three quarters of the market for pharmaceutical drugs, only one spends more on research than on marketing its products.

Pharmaceutical companies tend to say they are unique in needing to spend a higher proportion of their capital on research than almost any other industry. But of all the companies in the world, the one that invests the most in R&D is not a pharmaceutical company. It's Amazon. The online retailer spends about $20 billion a year on R&D, despite being renowned for both low prices and low profits.

However, the price of pharmaceutical drugs should not be determined by their research costs. Instead, it is determined by their value in preventing and treating disease. Exorbitant drug prices have two bad effects. First, high costs mean that lots of patients are unable to take their medications. Second, the high pharmaceutical drug prices distort research priorities, emphasizing financial gains and not health gains.

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Source: *The Atlantic*, 23 March 2019

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Extract 4: Strategies to make pharmaceutical drugs more affordable

Most Americans believe US prescription drug prices are too high — a conclusion reinforced by almost 3 in 10 Americans reporting they go without prescribed medications because of cost. Indisputably, Americans pay much higher prices for brand-name pharmaceutical drugs than people in other industrialized nations. Despite viewing drug prices as too high, most Americans feel that it is justified as they believe it will promote innovation of new pharmaceutical drugs that can improve people's lives.

Some pharmaceutical drugs from certain brands are insulated from competition by government-granted monopolies based on patents, data exclusivity protections (that prevent potential competitors from relying on an innovator's data), or other requirements from the Food and Drug Administration (FDA).

It is predicted that sharp price cuts would spark another wave of consolidation among pharmaceutical companies, which may in turn motivate governments to take action against anti-competitive mergers such as enforcing anti-trust laws or implementing lump sum taxes on pharmaceutical companies.

More broadly, a roundtable of experts from pharmaceutical and biotech executives to economists observed that pharmaceutical companies are highly responsive to incentives, such as those that currently exist pharmaceutical drugs for autoimmune disorders. They urged policymakers to think carefully about designing strategies to lower pharmaceutical drug prices.

Source: Adapted from *HealthAffairs*, 24 Nov 2020

Questions

(a) Explain **two** possible reasons that could account for the difference in the trend of meltblown prices between January and March 2020 with that between January and March   2021.
[4]

(b) Extract 1 suggests that higher mask prices means only the affluent can afford masks. This has led to concerns about equity.

Explain whether a cap on the prices of masks can address the above concern.
[5]

(c) With reference to Extracts 1 and 2, explain why it is a rational decision for Nomad to produce   masks.
[3]

(d) Discuss which market structure best describes the characteristics of the pharmaceutical   drugs   market   in   the   US.
[8]

(e) Discuss whether the US government's plan to enforce anti-trust laws is likely to be better than implementing lump sum taxes in improving outcomes for consumers in both   the   pharmaceutical   drugs   market   and   the   market   for   masks.
[10]

[Total: 30]

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Question 2: Impacts of the COVID-19 pandemic

Extract 5: Global economic outlook

The COVID-19 pandemic has sent the global economy into one of its worst recessions ever, forcing many countries into months of lockdown in 2020 that markedly reduced economic activity. It is not yet clear when a full recovery will be in place.

One main feature of coronavirus lockdowns around the world is the complete or partial closure of borders, which brought much of international travel to a halt. Another feature is that governments have increased spending to protect jobs and support workers. Such staggering levels of spending have pushed global public debt to an all-time high. However, governments should not withdraw fiscal support too soon as many workers remain unemployed and small businesses continue to struggle.

Source: *CNBC*, 27 December 2020

Figure 1: Singapore government's budget balance in relation to GDP
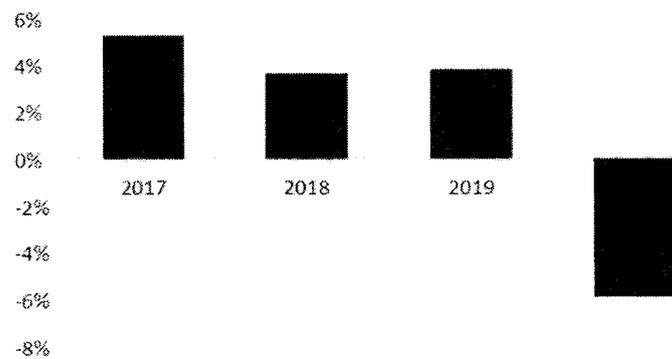
Figure 2: US government's budget balance in relation to GDP
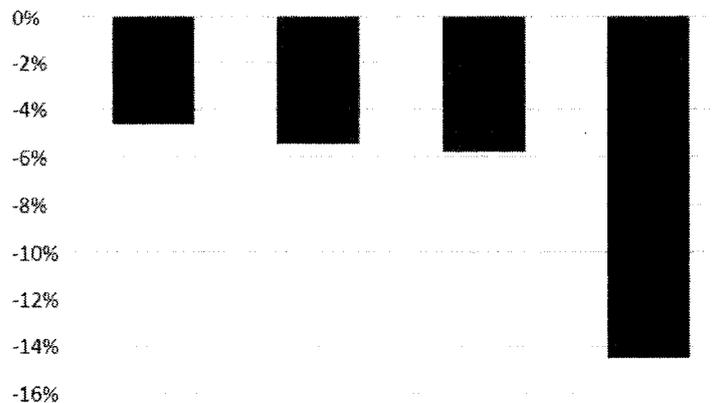
Source: *Statista*, 14 Jun 2020

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Extract 6: Will COVID-19 kill globalization?

The COVID-19 pandemic has upset the global supply chain that links factories across borders, enabling plants that produce finished products to draw components and raw materials from around the world. Previously, decades of increased outsourcing meant that medical devices, personal protective equipment and medications are largely produced overseas. However, since the start of the crisis, investors have begun pulling money out of developing economies, in what the International Monetary Fund (IMF) described as the largest ever outflow of capital from the developing world. As surgical masks become desperately desired items amidst a move by Western countries to bring critical manufacturing of medical supplies back home, and as airlines scrap flights, the pandemic seems likely to alter the contours of globalization.

In light of the pandemic, fears about open borders are also reinforced. In North America and Europe, there is a recalibration, a want to engage on a more selective basis given that the coronavirus was first detected in and seeped out of China.

Furthermore, the epidemic has prompted a re-examination of the world's central reliance on China as ground zero for manufacturing, a trend that was already underway via the trade war. According to President Trump, any product made in a foreign country and then sold in the United States (US) amounts to an instance of US workers getting fleeced. The Trump administration has thus imposed tariffs on hundreds of billions of dollars' worth of goods from China, promising that this would force companies, from clothing brands to gadget makers, to bring production back to the US. Yet, this has failed to produce the promised jobs, yielding a manufacturing slowdown in the US instead. Rather, some multinational companies have moved factory production away from China, shifting work to Vietnam, Bangladesh and Mexico.

While global supply chains will change in a post-crisis economy, much of that change will be in the form of diversification, rather than on-shoring. Moving forward, businesses are likely to spread out their supply chains and seek alternative suppliers in order to reduce the risk of a localized crisis creating a severe disruption. Moreover, with businesses' primary incentive being to maximize profits, producing components abroad will be a much cheaper substitute. This could mean that production jobs will be spread more evenly around the world, allowing more countries to participate in an eventual recovery.

Ultimately, globalization is far from over. Where travel and trade are inevitable, the answer is not to build walls but to encourage cooperation and clear information.

Source: *New York Times*, 5 March 2020

Extract 7: Singapore has been strengthening its food security for decades

In light of the COVID-19 outbreak, images of empty supermarket shelves have turned the spotlight on the island's food security. If the pandemic rages on globally, the rising number of quarantines and nationwide lockdowns could diminish agricultural labour and threaten global food production. This could put unprecedented pressure on Singapore's food security.

"The main challenge, which is unavoidable given the size of the city-state, is dependence on foreign produce to a very high percentage," said Dr Tortajada, senior research fellow at the Lee Kuan Yew School of Public Policy's Institute of Water Policy. "Singapore has to be self-reliant, which means using explicit policies to safeguard its foreign supplies of food while having some domestic production capability of its own," added Prof Paul Teng, an adjunct senior fellow in the S. Rajaratnam School of International Studies.

Today, Singapore's food imports come from over 170 countries and regions around the world, up from 160 in 2007. This diversification of food sources did not occur overnight and is a culmination of years of sourcing trips and prudent procurement decisions to ensure that the nation will not starve. However, if the COVID-19 pandemic continues to escalate and the surplus food capacity of the world nosedives, the rise of global food insecurity could put Singapore's food imports at risk.

Another way for Singapore to ensure its food security is to ramp up its local food production. Currently, less than 10% of Singapore's food is locally grown. In March last year, Environment and Water Resources Minister Masagos Zulkifli said that we are working towards '30 by 30', to build up our agri-food industry's capability and capacity to produce 30% of our nutritional needs locally and sustainably by 2030. Advances in food technology raise the possibility of manufacturing novel foods, such as food substitutes and alternative proteins like Impossible Meats. These innovations could pave the way to more productive methods of producing food. Building a soy-based meat patty takes a fraction of the time, manpower, land and raw material costs of rearing an animal. There is a rising trend in alternative lab-grown food production and high-tech, high-intensity farming around the world as well, such as indoor hydroponic vertical farms, indoor fish farms and recirculating aquaculture systems. A viable local agriculture industry in land-scarce Singapore is therefore feasible.

However, the price of locally grown food will always be higher than imported food due to the costs of land, manpower and raw materials here. As such, getting Singapore consumers to change their dietary preferences or to pay for higher priced foods is a tricky affair.

Source: *ChannelNewsAsia*, 23 Mar 2020

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Questions

(a) **(i)** Compare the change in Singapore government's budget balance with that of the US between 2017 and 2020.
[2]

(ii) Extract 5 suggests that the COVID-19 pandemic has sent many economies into a recession.

Explain how this will affect public sector debt in these economies. [2]

(b) Explain **two** factors that will determine the impact on China's balance of trade if the US raises tariffs on imports from China.
[4]

(c) Extract 6 states that China has been the world's 'ground zero for manufacturing'.

Explain **one** benefit and **one** cost on China's employment level from participating in the global supply chain.
[4]

(d) Discuss whether you agree with the view that the COVID-19 pandemic has killed globalisation.
[8]

(e) Extract 7 states that to be self-reliant, Singapore needs to safeguard its foreign supplies of food while having some domestic production capability of its own.

Explain how such measures can impact the Singapore economy and consider how likely they are to be successful in helping Singapore achieve self-reliance.
[10]

[Total: 30]
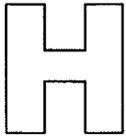
RIVER VALLEY HIGH SCHOOL
JC 2 Preliminary Examination
in preparation for General Certificate of Education Advanced Level
Higher 2

ECONOMICS   9757/02

Paper 2 Essays   **14 September 2022**

                                               2 hours 15 minutes

Additional Materials: Answer Booklet

READ THESE INSTRUCTIONS FIRST

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

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

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

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

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Section A

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

1 Different models of smartphones can vary considerably in price from as low as S$140 for a XiaoMi to as high as S$1650 for an iPhone. In 2020, a global microchip crunch, partly due to supply shocks fuelled by the Covid pandemic, and a sharp drop in incomes amidst a surge in unemployment are likely to affect the sales of various models of smartphones.

(a) Using **two** appropriate elasticities of demand, explain the effect of each of these changes on the sales volume of different models of smartphones. [10]

(b) Discuss the view that expenditure by consumers on different models of smartphones are more likely to fall given the combined effects of the above changes. [15]

2 In Budget 2020, more grants will be given to low-income students, and this increase applies for students from primary to tertiary education, with the largest increase in grants given to university education.

(a) Explain why the provision of education, if left to market forces, might be allocated inefficiently. [10]

(b) Discuss whether the increase in grants is justifiable. [15]

3 Even as many businesses were battered by the pandemic, the low-frills homegrown supermarket chain Sheng Siong did brisk business. It is aiming to open three to five stores annually in the next three to five years.

(a) Explain why a profit-maximising firm's decision to expand its production or shut down depends on its costs and revenue. [10]

(b) Discuss whether opening more stores is the best strategy for Sheng Siong to increase its profits. [15]

Section B

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

4 **(a)** Explain how a high rate of inflation and a deficit on the current account of the balance of payments can lead to serious problems for an economy.
[10]

   (b) Discuss whether a reduction in expenditures is likely to be the best policy measure in reducing a deficit on the current account of the balance of payments of an economy.
[15]

5 "Inflation is not the only challenge facing Singapore. Structural changes exist domestically and worldwide. These include an ageing population, increased geopolitical risks and climate change. Hence, we must accelerate economic reforms to raise productivity."

Mr Lawrence Wong, Deputy Prime Minister

   (a) Explain the likely economic consequences of these structural changes for Singapore's economy.
[10]

   (b) Discuss the policy measures that the Singapore government should take to address the economic consequences of these structural changes on the economy.
[15]

6 The US's persistent trade deficit with China has led to an ongoing trade war between the two countries. The US government has imposed tariffs on Chinese imports such as hard disks and steel products amidst concerns over China's extensive use of export subsidies. In turn, China has imposed retaliatory tariffs on US imports such as agricultural products and liquor.

   (a) Explain how the use of such protectionist policies might affect trade.
[10]

   (b) Discuss whether the use of protectionist policies is preferred over a policy of greater free trade.
[15]

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2022 RVHS Prelims Suggested Answers for Question 1

(a) Explain two possible reasons that could account for the difference in the trend of meltblown prices between January and March 2020 with that between January and March 2021. [4]

- First, the COVID-19 pandemic intensified in 2021 which caused a faster/more significant increase in DD for masks [1], hence a faster/more significant increase in the derived DD for meltblown [1] since meltblown is a factor input used to produce mask, thus price rose faster from Jan-Mar 2021 compared to Jan-Mar 2020.

- Second, the supply of meltblown is likely to be more price inelastic / less price elastic during 2021 [1] due to a lack of spare capacity OR low existing level of stock (Extract 1: "some companies are running at full capacity" "meltblown is in short supply") [1], price rose faster given an increase in DD.

(b) Extract 1 suggests that higher mask prices means only the affluent can afford masks. This has led to concerns about equity. Explain whether a cap on the prices of masks can address the above concern. [5]

A cap on the prices of masks refer to a price ceiling in this context. As the governments fear that mask prices could be too high and unaffordable for the masses, they may choose to impose a maximum price/ price ceiling to decrease the price in the hope that more people can afford to buy the masks.

Price ceiling is the highest permissible price at which pharm drug companies or mask producers can legally charge for their goods. With ref to Fig 1, for price ceiling (Pc) to be effective in reducing prices of pharmaceutical drugs or masks, it must be imposed below the original market price (P_0). After the price ceiling is imposed, some consumers (0 to Qs) are able to buy masks at Pc, which is lower than P_0. This is a way to improve equity as the price is reduced, allowing some low income groups to afford these masks.

[Diagram + Explanation= 3m]
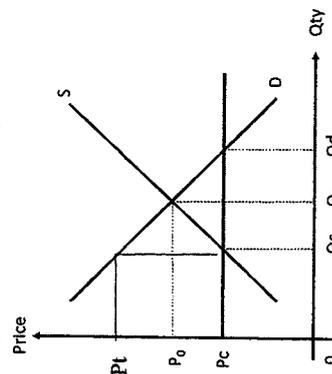
Fig 1 Price Ceiling

Possible problems of price ceiling [2]

- With ref to Fig 1, at Pc, quantity supplied is only Qs even though quantity demanded is Qd, resulting in a shortage of masks of QsQd, as indicated in extract 1 ("not enough masks are produced in the market"). This suggests that only a small group of consumers is able to buy at the lowered price, Pc. There are those who are willing and able to pay Pc, yet are unable to. Therefore, the price ceiling is only effective in allowing some consumers to buy the masks.

OR

- A black market could emerge. This is a market in which goods are sold illegally at prices that violate the legal restrictions. This might happen as there are consumers who are willing and able to buy the masks at prices between Po and Pc and there are also mask retailers who are willing and able to sell their masks with the same price range. This is however illegal so these groups of consumers and producers will choose to transact underground. This might cause the market for masks to collapse as mask retailers might no longer be willing to sell their masks in the legal market and this also affects the problem of equity.

(c) With reference to Extracts 1 and 2, explain why it is a rational decision for Nomad to produce masks. [3]

[2m for identifying MB and MC with reference to extract]
- the marginal benefit of producing masks is the higher revenue from selling masks due to the higher demand for masks / higher prices for masks (extract 1).

- The marginal cost of producing masks includes any cost involved in switching production to masks. Nomad has to purchase new machinery in order to produce masks (extract 2). As such, the marginal cost of producing masks is the additional cost of new machinery.

[1m for MB ≥ MC]
- Given that it is quite easy for mask producers to shift/ transit their machineries to alternative uses, it is likely that the marginal benefit will exceed the marginal cost of producing masks, thus, it is rational for Nomad to produce masks.

(d) Discuss which market structure best describes the characteristics of the pharmaceutical drugs market in the US. [8]

Pharmaceutical drugs companies seem to be operating in the oligopolistic market.

Factor 1: No. & size of firms
From Extract 3, it was mentioned that there are a few large companies that command three quarters of the US market for pharmaceutical drugs. This could suggest each of them own a relatively large market share and is likely to be a dominant producer in the market of pharmaceutical drugs. Thus, these companies have a high pharmaceutical-drug prices ability / high degree of market power, which is evident from the high pharmaceutical drug prices despite price increase in production and fall in marketing costs (extract 3).

Factor 2: Nature of product
From Extract 3, it was explained that a lot of money is put into research and advertising by pharm drug companies. These are examples of product differentiation. Pharmaceutical drug companies invest heavily in research to get the breakthrough to differentiate themselves

from the other companies, as they seek to invent the drug that could be unique and specific for a particular type of illness. A lot of advertising costs is incurred too as they attempt to do extensive product promotion. The aim is to keep the price elasticity of demand low, distinguishes itself from the close substitutes, and allowing the firm to raise prices to increase revenue. These actions of extensive product differentiation executed by the pharmaceutical drugs companies are evidence that they are in an oligopolistic market structure.

Factor 3: Level of BTE
In addition, there will be a high level of barriers to entry if it is an oligopolistic market structure. This seems to be the case of the pharm drugs market. The high costs and long time involved in the research and the expertise required to invent and market the pharmaceutical drug make it difficult for other firms to enter the market. Subsequently the patents that are applied by existing firms are also evidence of a legal high barrier to entry as other new entrants to the pharmaceutical drugs market will not be able to replicate the production of similar drugs, allowing existing firms high market power. As a result, the existing pharm drug firms are highly likely to be able to retain their supernormal profits even in the long run, which is also evident by the high and relatively constant prices, as the strong BTE influenced the pricing and output decision.

OR
However, a pharmaceutical drugs company could be behaving like a monopoly if it is able to invent the unique cure to a specific illness and they might patent the drug to ensure they are the sole provider. In this case, no other firms can replicate the production of the drug at all for a period of time, making the firm with the patent the sole producer.

Answers in this level will understand the differences between the market structures. There should be a clear application of 3 factors that distinguish market structures to the market of pharm drug in USA. An understanding of the implications of the characteristics that explain the real world pricing and output behaviour of the pharm drug companies will be essential.	L2 (4-6)
Answers in this level will show limited understanding and application of how the factors that distinguish market structures can be applied accurately to the market of pharm drugs in USA. Or Answers show understanding and application of 1 factor of characteristic to support the type of market structure that the market of pharm drug is likely to be in.	L1 (1-3)
Evaluation marks will be awarded for a well-supported judgment on the type of market structure the market of pharm drug is in with comparison with other likely market structures. A conclusion must be provided.	Evaluation (1-2)

(e) Discuss whether the US government's plan to enforce anti-trust laws is likely to be better than implementing lump sum taxes in improving outcomes for consumers in both the pharmaceutical drugs market and the market for masks. [10]

Currently, prices for both pharmaceutical drugs (extract 3) and masks (extract 1) are rising, which reduces consumer surplus. The US government plans to implement anti-trust laws and lump-sum taxes to reduce prices for pharmaceutical drugs, thereby increasing quantity, and possibly increasing variety of products for consumers. Thus, consumer outcomes will be improved. However, there may be limitations, as well as drawbacks in terms of equity and efficiency.

Legislation (anti-trust laws):
- Anti-trust laws make it illegal for firms to join forces to fix prices, divide the market or rig bids. If found guilty, firms may end up paying penalties in the form of fines. While imposing fines may not directly change the price charged and output produced, they act as a form of deterrence against anti-competitive behaviour in markets.

- Hence, anti-trust laws work to promote competition & reduce degree of market dominance, such as preventing mergers between major pharmaceutical drug companies (extract 4). By promoting competition, demand for each firm's products falls and becomes more price elastic with the increase in number of substitutes sold by competitors. This lowers the degree of market power such that P exceeds MC by a smaller extent. Consequently, there will be lower prices and higher quantity of goods in the market. Also, the presence of more firms translate to a variety of brands that offer consumers more choices.

Anti-trust laws have some limitation:
- However, lower degree of market power due to anti-trust laws may result in lower supernormal profits for pharmaceutical drug companies, which may result in less funds available for both product and process innovation (extract 4). Thus, this will impede not only improvement in consumer choice but also potential decreases in prices in the long run.

Lump sum tax:
Alternatively, lump sum tax (extract 4) can be implemented, to reduce excessive profits of companies producing pharmaceutical drugs or masks.
Specifically, a lump sum tax is fixed in amount and levied without regard to the output or revenue of the firm. It is regarded as a fixed cost to the firm and hence, it will increase average cost from AC_0 to AC_1 (figure 2). Thus, it will have no effect on MR or MC, and hence, price & output remains unchanged. This suggests consumers do not have to bear the burden of the tax. The lump sum tax merely transfers the supernormal profit from the firm to the government.
The tax revenue collected by the government can subsequently be redistributed to the population in terms of grants to consumers / direct subsidies to consumers for the consumption of pharmaceutical drugs and masks. Through this, consumers will effectively pay less out-of-pocket. Therefore, consumer surplus will likely increase.

Limitation:
However, it is often difficult to estimate the appropriate amount of lump sum tax. Each market may require a different amount of lump sum tax, which requires in-depth market analysis by the government to determine. Therefore, due to imperfect information, there may be a possibility that the lump sum tax imposed is too little an amount. Then, the government may not be able to collect sufficient funds to disburse grants to consumers for consumption of pharmaceutical drugs and masks. Hence, consumer surplus may not increase.
OR
However, the increase in consumer surplus is conditional on the government's redistribution of tax revenue to population. If the government decides to use the tax revenue for other purposes such as paying off government debt, then there may not be an increase in consumer surplus in both markets.
OR

improved. However, there may be limitations, as well as drawbacks in terms of equity and efficiency.

However, given that it is suggested high profits from high prices promote innovation of new drugs (ext. 4), lower profits may reduce the ability of the firm to undergo product innovation, thus reducing the increase in variety of drugs, making consumers worse off.

Price/ Cost / Revenue
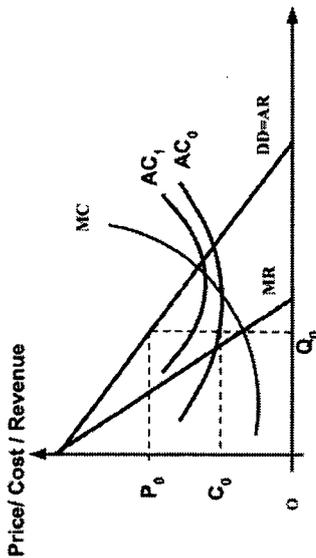
Figure 2: Effects of a lump sum tax on a firm

Answers in this level consider how both policies are effective in lowering prices in both markets. There will be consideration of the limitations of these policies in both markets.	L2 (4-7)
Answers in this level will show limited understanding of how both policies are effective in lowering prices in both markets OR show an analytical explanation of how 1 of the policy is effective in lowering prices in both markets. There may be some superficial consideration of limitations of these policies in both markets.	L1 (1-3)
Evaluation marks will be awarded for a well-supported judgment on whether each of the policies are effective in lowering prices. A conclusion must be provided.	Evaluation (1-3)

Suggested Answers for Question 2

a) i) Compare the change in Singapore government's budget balance with that of the US between 2017 and 2020. [2]

Singapore saw a decreasing budget surplus that turned to a deficit whereas the US saw an increasing budget deficit. [2]

a) ii) Extract 5 suggests that the COVID-19 pandemic has sent many economies into a recession. Explain how this will affect the public sector debt in these economies. [2]

- Unemployment has risen amidst an increase in layoffs, resulting in an increase in government spending due to a rise in government payouts like unemployment benefits in attempts to dampen further contraction in the economy.
- Combined with a fall in tax revenue as incomes fall.
- When the government budget enters a deficit and if governments resort to borrowing to finance the budget deficit, public sector debt increases.

b) Explain two factors that will determine the impact on China's balance of trade if the US raises tariffs on imports from China. [4]

1st factor
- PED of China's exports [1]
- The more price elastic the demand, the larger the fall in export revenue, causing the worsening of BOT position to a larger extent. [1]

2nd factor
- Amt of tariff imposed [1]
- The larger the amount of tariff imposed by the US, the greater the price increase of China's exports in US. Thus, the larger the fall in quantity demanded for China's exports in the US. Assuming China's import expenditure remain unchanged, this results in the BOT position worsening to a greater extent. [1]

c) Extract 6 states that China has been the world's 'ground zero for manufacturing'. Explain one benefit and one cost on China's employment level from participating in the global supply chain. [4]

Benefit
- As countries offshore production to China, this leads to a rise in long term capital inflows into China as foreign direct investments (FDI) in China increases. Such cross-border investments could be diverted into the building of production facilities or manufacturing plants, which in turn translates to the increase in AD [1]
- And thus, leads to a multiplied increase in NY via the multiplier effect. The increase in production levels will lead to an increase in derived demand for factor inputs like labour, thus increasing employment level in China especially in the outward-facing sectors. [1]

Cost

Either

- Conversely, the external disruption brought about by the pandemic could lead to reduced economic activity as economies contract and export demand falls which leads to a fall in AD [1]
- And thus, leads to a multiplied decrease in NY via the multiplier effect. The decrease in production levels will lead to a decrease in derived demand for factor inputs like labour, which could lead to a rise in cyclical unemployment in China especially in the export-oriented sectors. [1]

OR

- In addition, the decision to reduce reliance on China to diversify global supply chains has resulted in countries shifting production out of China to other low-cost production sites like Mexico. [1]
- This would hasten changes in China's comparative advantage and in turn hastening the skills obsolescence of current workers. This in turn translates to a rise in structural unemployment. [1]

d) Discuss whether you agree with the view that the COVID-19 pandemic has killed globalisation. [8]

Intro

Globalisation is defined as the closer economic integration of economies through increased flow of goods and services, capital as well as labor. To determine whether the COVID-19 pandemic has killed globalisation, we must first ascertain whether the pandemic has resulted in increased or decreased flow of the aforementioned factors.

Thesis: the COVID-19 pandemic has killed globalisation

- The global recession arising from the pandemic has resulted in a bleak economic outlook and thus, fall in investors confidence. As firms expect a fall in their internal rate of returns, they will reduce investment as evidenced in Extract 6 where "investors began to pull money out of developing economies". This huge capital outflow from these developing countries back to the source countries suggest that a reduced flow of capital between these economies.
- Extract 6 also mentions that Western countries are bringing "critical manufacturing of medical supplies back home", suggesting an even larger outflow of capital from other countries back to the Western countries. As the Western countries reduce the offshoring and outsourcing of production of medical supplies to other countries, they are now able to produce these domestically, thus reducing the flow of goods and services between them and the rest of the world.
- In addition, Extract 5 mentions the "complete or partial closure of borders which brought much of international travel to a halt", which reduced the ease of entering another country. Extract 6 also mentions that "airlines scrap flights" which has largely reduced the amount of travel. Together, these led to a reduced flow of labor between countries.

Anti-thesis: the COVID-19 pandemic has not killed globalisation

- On the other hand, while COVID-19's disruption of the global supply chain has prompted many countries to move their production out of China, this does not necessarily mean a reduced flow of capital between economies. As mentioned in

Extract 6, production merely shifted "away from China" to other low-cost countries such as Vietnam, Bangladesh and Mexico, rather than back to the shores of the source countries. This is because rational producers would still want to maximise their profits and one way to achieve it is through minimising their cost. Firms would want to offshore their production to take advantage of the low labor cost and abundance of low-skilled labor workers in other countries as evidenced in Extract 6 where "producing components abroad will be a much cheaper alternative". Therefore, there will still be capital inflow into countries with comparative advantage in labor-intensive goods as MNCs will still continue to offshore and outsource their production.

- More importantly, countries are also rethinking their reliance on just one country as their offshore destination. Thus, there will be greater flows of capital into not just one, but many economies as countries seek to diversify their supply chains to reduce the risk of a localized disruption.

Level	Knowledge, Application, Understanding & Analysis	Marks
L2	Well-developed discussion on whether the COVID-19 pandemic has killed globalisation. Reference made to evidence from extract that support the arguments made.	4-6
L1	Under-developed discussion on whether the COVID-19 pandemic has killed globalisation. Some reference made to evidence from extract that support the arguments made. OR Well-developed explanation on either the COVID-19 pandemic has or has not killed globalisation. Some reference made to evidence from extract that support the arguments made.	1-3
	Evaluation	
E2	Well-reasoned judgement on whether the COVID-19 pandemic has killed globalisation.	2
E1	Unsupported judgement on whether the COVID-19 pandemic has killed globalisation.	1

e) Extract 7 states that to be self-reliant, Singapore needs to safeguard its foreign supplies of food while having some domestic production capability of its own.

Explain how such measures can impact the Singapore economy and consider how likely they are to be successful in helping Singapore achieve self-reliance. [10]

The first measure undertaken by Singapore to be self-reliant in food is to safeguard our foreign supplies of food. By diversifying our imports, the negative impact on us will not be so serious when there is any disruption by a single source as Singapore will have the ability to quickly top up the shortfall from other sources. For example, when Malaysia announced that it would be locking down its borders in Mar 2020, we are able to import eggs from alternative sources like Thailand. This helps to prevent costs of imported final goods or raw materials from rising too quickly, thus curbing the fall in short run aggregate supply (SRAS). As such, it helps to mitigate imported and cost-push inflation caused by the increase in prices of imported final goods or raw materials when there is a fall in supply, which helps to prevent any drastic fall in national income and increase in cyclical unemployment.

If diversifying our food imports involves signing more free trade agreements with more countries, this will not only facilitate the flow of goods and services. It also helps to facilitate the flow of capital and labour. Depending on whether there are more inflows of foreign direct investments (FDIs) investing in Singapore or whether there are more Singaporean firms venturing overseas, this will cause a surplus or a deficit respectively in our financial account under our balance of payments.

The second measure is to undertake supply-side policies to drastically ramp up our local food production. The government can provide tax incentives, grants or subsidies to encourage firms to undertake research and development and also adoption of technology so as to increase in the quantity and quality of factors of production, especially in the food industry, which will then increase the productive capacity of the Singapore economy from Y_{F0} to Y_{F1} as shown in Figure 1. For example, advances in food technology have raised the possibility of manufacturing novel foods, such as food substitutes and alternative proteins like Impossible Meats, which allowed food to be produced more efficiently with less inputs required, thus increasing productivity and productive capacity. In the short run, the increase in adoption of new machineries and construction of buildings/facilities to facilitate the production of food will also increase investment and thus aggregate demand (AD) from AD_0 to AD_1 as shown in Figure 1. As AD increases, firms will increase production by hiring more factor inputs, which yields more income for households, thus increasing induced consumption over multiple time periods. If Singapore economy is operating with spare capacity, the initial increase in AD will eventually trigger multiple increase in real NY, leading to actual growth.

Taken together, this measure has the effect of increasing both AD and long run aggregate supply (LRAS), increasing NY from Y_0 to Y_1, as shown in Figure 1, thereby helping to achieve sustained economic growth over time. As national income increases and more output is being produced, more factors of production, including labour, will be employed and this will increase employment levels.
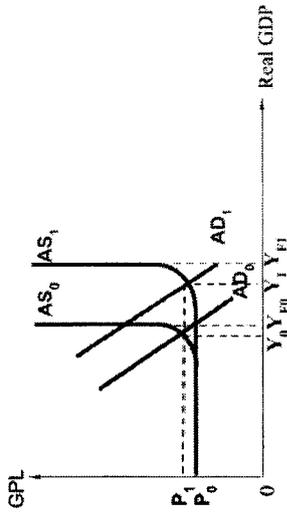
In addition, if the supply-side policies are successful in coming out with product development, this will help to raise competitiveness and demand for Singapore's exports. This will further increase AD and also increase employment in export-related food industries. Increase in exports of goods will also improve trade in goods account in current account of Singapore's balance of payments.

Diversifying our sources of imports is not just about importing from many countries or blindly signing FTAs with many countries. The strategic thing to do is to pick countries that regularly show a large surplus over domestic consumption for the food concerned to import from as they are more likely to export their production. As for the second measure to undertake supply-side policies to drastically increase local food production, it is costly to adapt technology to the production of food.

Figure 1

Level	Knowledge, Application, Understanding & Analysis	Marks
L2	Well-developed explanation on how the two measures will impact the macroeconomic goals of Singapore. Reference made to evidences from extract that support the arguments made.	5-7
L1	Under-developed explanation on how the two measures will impact the macroeconomic goals of Singapore. Some reference made to evidences from extract that support the arguments made. OR Well-developed explanation on how one measure will impact the macroeconomic goals of Singapore. Some reference made to evidences from extract that support the arguments made.	1-4
	Evaluation	
E3	Well-reasoned judgement on whether the two measures are likely to be successful in helping Singapore achieve self-reliance.	3
E2	Under-developed judgement on whether the two measures are likely to be successful in helping Singapore achieve self-reliance.	2
E1	Unsupported judgement on whether the two measures are likely to be successful in helping Singapore achieve self-reliance.	1

2022 RVHS J2H2 Prelims Paper 2 Suggested Answer

Different models of smartphones can vary considerably in price range from as low as S\$140 for a Xiaomi to as high as S\$1650 for an iPhone. In 2020, a global microchip crunch, partly due to supply shocks fuelled by the Covid pandemic, and a sharp drop in incomes amidst a surge in unemployment are likely to affect the sales of various models of smartphones.

(a) Using two appropriate elasticities of demand, explain the effect of each of these changes on the sales volume of different models of smartphones. [10]

(b) Discuss the view that expenditure by consumers on different models of smartphones are more likely to fall given the combined effects of the above changes. [15]

Suggested answers (a)

Supply chain disruptions contributing to supply shocks could imply higher procurement costs for smartphone manufacturers and thus a fall in supply of smartphones. This could lead to higher costs of production for smartphone manufacturers and thus a fall in supply of smartphones. This is shown by the leftward shift in supply curve from S0 to S1 in Figure 1.

Figure 1
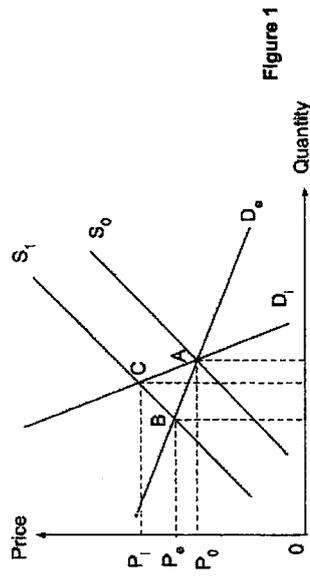
The fall in supply of smartphones leads to a rise in equilibrium price and thus, fall in quantity demanded. However, the extent to which quantity demanded and thus sales volume falls depends on the PED value of smartphones. PED is defined as the responsiveness of quantity demanded to a given change in price, ceteris paribus. With reference to Figure 1, when the demand for a given smartphone is price inelastic i.e. $PED < 1$, an increase in price from P0 to Pi will lead a less than proportionate fall in quantity demanded, thereby resulting in a fall in sales volume from Q0 to Qi. A smartphone with $PED < 1$ could be likely in the case of brand loyalty where consumers perceive there to be few close substitutes to a given model of smartphone. For example, Apple enjoys relatively strong brand loyalty due to its high quality, cutting-edge design and innovative hardware and software that reduces its substitutability on the smartphone market. Conversely, when the demand is price elastic i.e. $PED > 1$, an increase in price from P0 to Pe will lead to a more than proportionate fall in quantity demanded, thereby resulting in a fall in sales volume from Q0 to Qe. A smartphone with $PED > 1$ could be likely in the case of the Xiaomi smartphone. Given its basic features, it is likely that there is a wide range of close substitutes available for consumers to easily switch to other brands, specifically those with easily replicable features, should the price of Xiaomi smartphones increase. Thus, given $PED > 1$, a rise in price of the Xiaomi will lead to significant fall in sales volumes.

On the other hand, a sharp drop in incomes given the rise in unemployment levels could have varying outcomes on sales volumes depending on the YED values. For instance, inferior goods would have a negative YED value i.e. $YED < 0$ while normal goods would have a positive YED value i.e. $YED > 0$.

Given a fall in incomes, the demand for certain models of smartphones may increase if they are perceived as inferior goods, where $YED < 0$. For example, Xiaomi smartphones may be perceived by consumers to be of lower performance standards and quality. Thus, as incomes contract, demand for cheaper and lower quality smartphones like Xiaomi may increase instead. This results in an increase in demand from D0 to D1 and thus a rise in sales volumes from Q0 to Q1, as noted in Figure 2.

However, smartphones may also be perceived as normal goods. In the case of normal goods, a fall in income translates to a fall in demand for the good. The extent of fall in demand is in turn dependent on whether the good is perceived as a necessity i.e. $0 < YED < 1$, in which case a change in income results in a less than proportionate change in demand, or luxury i.e. $YED > 1$, in which case a change in income results in a more than proportionate change in demand. This thus determines the extent of fall in sales volume. For instance, the Apple smartphones may be deemed a necessity in economies with higher income levels and at a higher stage of economic development. Thus, any contraction in income will translate to a less than proportionate fall in demand for the smartphone, from D0 to D2. Sales volume thus falls from Q0 to Q2. Conversely, the same smartphone may be perceived as a luxury by consumers of economies at relatively lower stages of economic development and with lower income levels. Thus, a fall in income could result in a more than proportion fall in demand for the smartphone, from D0 to D3. Sales volume thus falls to a larger extent from Q0 to Q3.
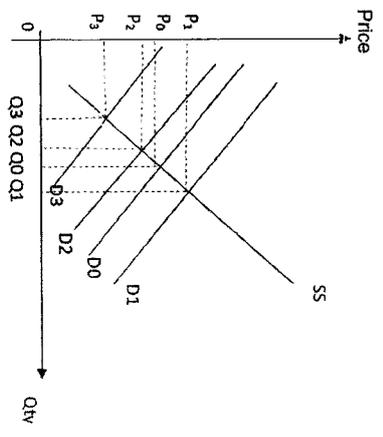
Figure 2

LORMS

Levels	Knowledge, Application/Understanding and Analysis
L3 (8-10)	For an answer that uses both price and income elasticities of demand to explain the likely effects on sales volume of various models of smartphones. Well-developed explanations with use of examples relating to the context.
L2 (5-7)	For an answer that uses both price and income elasticities of demand but gives an underdeveloped explanation of the likely effects on sales volume of various models of smartphones. OR For an answer that only explains either PED or YED well (i.e. only analyses the impact of either the fall in incomes or rise in price owing to supply chain disruptions).
L1 (1-4)	Insufficient breadth and scope in essay. For an answer that may show little knowledge on PED and YED. Economic analysis might be lacking.

(b) Discuss the view that consumer expenditure on different models of smartphones is more likely to fall given the combined effects of the above changes. [15]

Introduction

Consumer expenditure (CE) refers to total amount of spending on smartphones by consumers. It is calculated as the price of the smartphone (P) multiplied by the quantity bought (Q) at that given price.

Given the combination of a fall in supply of smartphones due to higher costs of microchips and fall in consumer incomes, the impact on consumer expenditure depends on PED value and YED value respectively.

Body

Thesis: CE will fall

Given that YED > 0, where smartphones are considered normal goods, the fall in incomes amidst rising unemployment would result in a fall in demand. This leads to a fall in price and quantity and thus a fall in CE, as may be seen in Fig 2 (part a).

If consumers perceive there to be wide availability of close substitutes for a given smartphone, for example, should the user be able to switch easily to other brands with easily replicable features, then PED is likely > 1.

As price of smartphones increases in light of the rise in manufacturing costs due to the possible rise in procurement costs of microchips hit by supply chain disruptions, quantity demanded for smartphones will thus fall more than proportionately, resulting in a fall in CE, as may be seen in Fig 1 (part a).

The above combined effect is thus a definite fall in CE from area 0P0AQ0 to area 0P1BQ1, as may be seen from Figure 3.
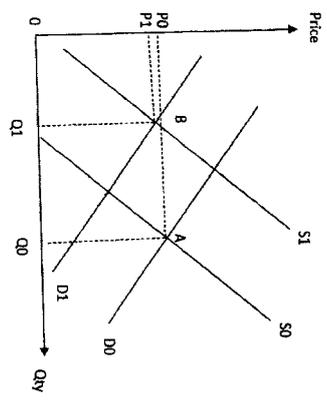
Anti-thesis: CE will rise

However, certain models of smartphones may be considered inferior goods due to their perceived lower performance standards relative to other models. Thus, YED is likely < 0. Given the fall in incomes, demand for such goods could increase given their relative affordability. This in turn leads to a rise in price and quantity and thus a rise in CE, as may be seen in Fig 2 (part a).

Figure 3

Given their lower price points, it is likely that these smartphone models comprise a relatively smaller proportion of individuals' incomes, then PED is likely < 1. A rise in price of smartphones

would thus cause quantity demanded to fall but less than proportionately, resulting in a rise in CE, as may be seen in Fig 1 (part a).

The above combined effect is thus a definite rise in CE from area 0P0AQ0 to area 0P1BQ1, as may be seen from Figure 4.
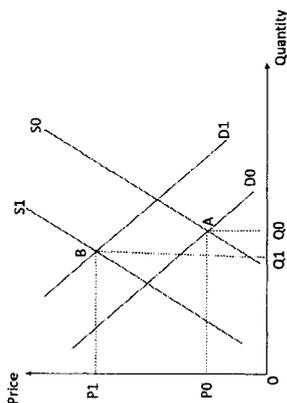
Figure 4

Possible third likely outcome

If PED < 1, then increase in price will lead to less than proportionate fall in quantity demanded and thus a rise in CE (as explained in part (a).

If YED > 0, then the fall in incomes will lead to a fall in demand and thus a fall in CE.

Combining the effects of both PED < 1 and YED > 0, there's a need to weigh which outcome (i.e. CE fall or rise) outweighs the other. This in turn depends on YED value.

For instance, for a luxury good, the fall in incomes will lead to a more than proportionate fall in demand and thus a significant fall in CE. Should the YED effect outweigh the PED effect, then CE will fall instead.

On the other hand, for a necessity, the fall in incomes will lead to a less than proportionate fall in demand and thus a smaller fall in CE. Should the PED effect outweigh the YED effect, then CE will rise instead.

Thus, the more luxurious consumers perceive the smartphone model to be, the more likely the overall fall in CE.

LORMS

Levels	Knowledge, Application/Understanding and Analysis
L3 (8-10)	For an answer that uses appropriate economic analysis to discuss a range of likely effects on consumer expenditures of various models of smartphones given the combined effects of a fall in supply of smartphones and a fall in income levels.
	There is strong application of economic concepts and analysis relating to the context given. Appropriate examples are used.
L2 (5-7)	For an answer that gives an underdeveloped explanation of the likely effects on consumer expenditures of various models of smartphones given the combined effects of a fall in supply of smartphones and a fall in income levels.
	There is some attempt to apply to the context but the examples may not always be appropriate.
L1 (1-4)	For an answer that shows knowledge of the likely effects on consumer expenditures of various models of smartphones
E3 (4-5)	For an answer that arrives at an analytically well-reasoned judgement about what affect the effects on consumer expenditures of various models of smartphones
E2 (2-3)	For an answer that makes some attempt at a judgement about the likely effects on consumer expenditures of various models of smartphones
E1 (1)	For an unexplained judgement

2. In Budget 2020, more grants will be given to low-income students, and this increase applies for students from primary to tertiary education, with the largest increase in grants given to university education.
a) Explain why the provision of education, if left to market forces, might be allocated inefficiently.

(a) Explain why the provision of education, if left to market forces, might be allocated inefficiently. [10]
(b) Discuss whether the increase in grants is justifiable. [15]

Introduction

The Singapore government intervenes in the market for education because the equilibrium in an unregulated market fails to achieve a socially optimal allocation of resources and as such, market failure arises. There are a few sources of market failure in the market for education, namely positive externalities, imperfect information and market dominance.

Body

Education is considered a merit good as it is deemed desirable by the government and yet is perceived by the government to be under-consumed. This under-consumption can be attributed to individuals failing to include all benefits due to their disregard of positive externalities and/or the under-estimation of private benefits by individuals.

First of all, positive externalities are beneficial side effects of production or consumption on persons other than the producers and consumers themselves, i.e. the third parties. These third parties do not make payment to enjoy the external benefits. In the context of education, consumers only take into account their own private benefit, such as the higher incomes that they can possibly earn in future. However, there are positive spillover effects to third parties such as people working around the more educated person. A more educated person is able to guide his/her co-workers which increases the co-workers' productivity and thus, wage rate.

With reference to Figure 1, Marginal Social Benefit (MSB, which is the additional gains in welfare by the whole society from consuming or producing one more unit of education) is greater than the Marginal Private Benefit (MPB, which is the additional benefit that consumers gain from consuming one more unit of education) as private individuals do not take into consideration the Marginal External Benefit (MEB, additional benefit experienced by third parties from the consumption of one more unit of education) from the consumption of education. Assuming there are no negative externalities, marginal social cost (MSC) is equal to the marginal private cost (MPC). MPC refers to the increase in cost of providing education to an additional consumer/student. These costs include the cost of engaging teachers, teaching materials, providing amenities, etc.

The socially optimal level of output is at Q_s, where MSB intersects with MSC as shown in Figure 1 and this is the output that maximises societal welfare. However, since individuals and producers only consider their own private benefits and costs and disregard the benefit to external parties, market level of output is at Q_m, where MPB intersects MPC. As Q_m is less than Q_s, there is under-consumption of education. This under-consumption leads to a deadweight loss incurred by society, shown by area AE_0E_1.
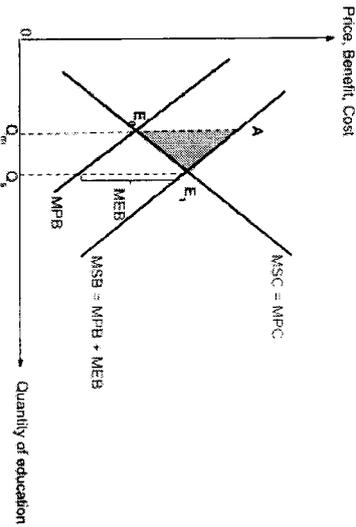
Figure 1: Positive Externality

Besides positive externalities, consumers might also under-consume education because of imperfect information. Individuals may not be able to accurately value the long-term benefits of consuming education, especially when individuals do not realise the long-term benefits of receiving education like future job opportunities and income levels. As such, they may underestimate the private benefits. MPB is the additional benefit that individuals gain from

consuming one more unit of education while MPC refers to additional cost that individuals incur from consuming one more unit of education.
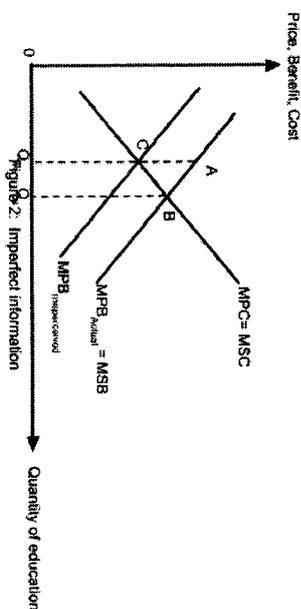
Figure 2: Imperfect information

Referring to Figure 2, the underestimation of private benefits causes consumers' misperceived MPB to be lower than the actual MPB. The market output is Q_m, given by the intersection of $MPB_{misperceived}$ and MPC, whereas the socially optimal level of output is Q_s, where MSB=MSC. Since $Q_m < Q_s$, there is under-consumption of education due to imperfect information. The deadweight loss due to under-consumption of education is shown by area ABC i.e. market failure results.

The above are the main reasons why the provision of education, if left to market forces, might be allocated inefficiently.

Level	Knowledge, Application, Understanding & Analysis	Marks
L3	For a well-developed answer that shows thorough knowledge and application as to why the provision of education might be allocated inefficiently, if left to market forces. Any two of the three reasons (well-explained with diagrams) for market failure to get full range of L3 marks.	8-10
L2	For an undeveloped answer that shows knowledge and application as to why the provision of education might be allocated inefficiently, if left to market forces. Undeveloped: Only one reason well-explained OR two reasons briefly explained for why free market falls in the provision of education AND lacking in tools of analysis (no diagrams and examples).	5-7
L1	For an answer that shows some knowledge as to why the provision of education might be allocated inefficiently, if left to market forces.	1-4

b) Discuss whether the increase in grants is justifiable. [15]

higher in the case of university education, compared to basic education, there is less justification for the government to provide the largest increase in grants to university education.

Conclusion

One important consideration on whether to increase grants or not depends on the sources of the market failure. If the source of market failure is due to the disregard of positive externalities, then increase in grants seems justifiable as grants is effective in increasing the equilibrium quantity of university education. To streamline even further, the increase in grants can also be targeted at those courses that Singapore currently lacks sufficient manpower in i.e. those that require deep domain knowledge such as in blockchains / machine learning, etc. Many apex jobs in these industries are still helmed by foreign talent so there is a need to quickly build up our domestic talent pool. However, if the source is due to imperfect information or market dominance, then increase in grants might not be justifiable as other measures might be able to address these sources better. For example, in the case of imperfect information, campaigns to raise the awareness of benefits of education will be more effective. Lastly, in the case of market dominance, some level of public provision might be better to address the problem so as to keep the private providers in check and also to set a benchmark for the private providers.

Level	Knowledge, Application, Understanding & Analysis	Marks
L3	Well-developed discussion on whether the increase in grants for education is justifiable and whether it is justifiable to give the largest increase to university education. Well-developed: • provision of relevant examples and use of accurate and well-labelled diagrams	8-10
L2	Underdeveloped discussion on whether the increase in grants for education is justifiable and whether it is justifiable to give the largest increase to university education. OR Well-developed explanation on whether the increase in grants for education is justifiable.	5-7
L1	Smattering of valid points. An answer that shows some knowledge of why the increase in grants for education is justifiable.	1-4
Evaluation		

Thesis: Increase in grants is justifiable

First of all, due to the underconsumption of education, the Singapore government intervenes in the market for education. With reference to Figure 1, when government provides consumers grants for education, this will encourage consumption and shift the MPB curve to the right, increasing the market equilibrium output, Q_m, towards the social optimum level of output Q_e. If the amount of grant is equal to MEB at Q_e, then the socially optimum level of education Q_e will be achieved. As such, an increase in grants for education is justifiable as it will allow the government to achieve an improvement in allocative efficiency as market equilibrium moves closer to the socially optimal level of output.

Secondly, income inequity is another important reason why the increase in grants is justifiable. Income inequity happens when income earned by the person/family from the labour market is insufficient to enable him/her to have access to education. Goods and services are allocated in the free market according to the willingness and ability of individuals to pay. However, if left to the free market, not all individuals will be able to afford education. A high level of education can help countries to promote social mobility and engender confidence in their economies as it allows economies to fully realize the potential of each citizen regardless of their family background. In view of these social objectives, it would be justifiable for the government to increase grants for education even though these grants might just apply to the minority of the population i.e. the lower income group.

Lastly, the increase in grants for education will be beneficial for Singapore in the long run. By investing in human capital, it helps to increase the quantity and quality of human capital. By having a more educated workforce, it helps to increase labour productivity and thus, the productive capacity of the economy, achieving potential economic growth. In addition, this increase in labour productivity helps to attract foreign direct investments (FDIs) into the economy. As these FDIs come into Singapore, they will spend more on building new buildings, plants and machineries. With an increase in investment, this will lead to an increase in aggregate demand (AD), firms will increase production by hiring more factor inputs, which yields more income for households, thus increasing induced consumption over multiple time periods. If the economy is operating with spare capacity, the initial increase in AD will eventually trigger multiple increase in real national income (NY), leading to actual economic growth. With actual and potential economic growth, Singapore will be able to achieve sustained economic growth. This will increase the global competitiveness of Singapore economy.

Anti-Thesis: Increase in grants is NOT justifiable

The first reason why increase in grants is not justifiable is that it is difficult to determine the required size of the grants as it is difficult to calculate the MEB derived from the consumption of education by the society. If the amount of MEB has been over-estimated by government and as such too much grants has been given, this will result in over-consumption and substantial wastages of resources, which might lead to an even greater welfare loss than without the increase in grants.

Secondly, if the MEB that the society gains from primary and secondary education is compared against that of university education, it should be higher for the case of primary and secondary education. This is because there is a significant premium earned by individuals receiving higher education. Because of this significant 'premium' that higher education provides, there is a strong incentive for individuals to pursue university qualifications and this is so, even if there is no increase in grants. As the proportion of private benefits relative to external benefits is much

E3	Well-reasoned judgement on whether the increase in grants for education is justifiable and whether it is justifiable to give the largest increase to university education.	4-5
E2	Under-developed judgement on whether the increase in grants for education is justifiable and whether it is justifiable to give the largest increase to university education.	2-3
E1	Unsupported judgement on whether the increase in grants for education is justifiable.	1

3. Even as many businesses were battered by the pandemic, the low-frills homegrown supermarket chain Sheng Siong did brisk business. It is aiming to open three to five stores annually in the next three to five years.

(a) Explain why a profit-maximising firm's decision to expand its production or shut down depends on its costs and revenue. [10]

(b) Discuss whether opening more stores is the best strategy for Sheng Siong to increase its profits. [15]

Introduction

During a recession, national income and consumers' income is falling. As such, demand for normal goods and services would fall, thus affecting the revenue firms would be earning. As such, a firm may to consider whether to shut down or to continue production if it is making subnormal profits.

Body: A firm's decision to shut down or continue production depends on its costs and revenue

To minimise losses, a firm would weigh its average costs against its average revenue to decide whether to continue production or shut down in the short run. In the short run, the AC comprises the average variable cost (AVC) and average fixed cost (AFC). The AFC is the average cost of the fixed factor which does not vary with the level of output and it is incurred even when production ceases.

As explained above, the pandemic has resulted in a fall in demand for restaurant meals. Assuming that the firm is operating at its profit maximizing level of output where MR=MC, the fall in demand could result in a restaurant making subnormal profits where AR<AC. Whether the firm decides to shut down or to continue production depends on if the AR is able to cover its AVC.

If AR>AVC at the profit maximizing level of output, the firm will still continue production, despite earning subnormal profit. This is because if the firm continues operation, it can cover all of its variable cost and even some of its fixed cost. However, if it shuts down, the firm will still have to incur fixed cost. Hence, the firm should continue operation as the loss incurred is smaller compared to if it shuts down.

However, in the event if the AR<AVC at the profit maximizing level of output, the firm will shut down in the short run. This is because the AR is unable to cover even the cost of using the variable factors and this implies that the firm incurs losses from the use of its variable factors in addition to the use of its fixed factors. The firm is better off shutting down since it will incur a smaller loss of only its AFC.

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

On the other hand, a firm may expand production as long as its marginal revenue exceeds marginal costs.

Body: A firm's decision to expand production depends on its marginal costs and revenue

Knowledge, Application / Understanding and Analysis	
L3	For an answer that uses analysis to explain how a firm uses average/total costs and revenue concepts to determine whether to shut down or continue production in the SR vs LR, and how the firm uses marginal cost and revenue concepts to explain its decision to expand production. Note: diagrammatic analysis is not required to score L3	8-10
L2	Undeveloped explanation of how the firm uses costs and revenue concepts to explain its decision to shut down AND expand production	5-7

OR	
Developed explanation of how the firm uses costs and revenue concepts to explain its decision to shut down OR expand production—cap at 5m	

L1	Knowledge of shut down condition and expand production	14

b. Discuss whether opening more stores is the best strategy for Sheng Siong to increase its profits. [15]

Introduction:

During the pandemic, Sheng Siong saw a huge surge in revenue and net profit as the pandemic drove people to shop for groceries and sundry items. To increase profits for an oligopoly firm like Sheng Siong, it could undertake price and non-price strategies to increase total revenue, as well as measures to reduce cost of production. However, these strategies have its own set of limitations too. Hence this essay will consider strategies and weigh which strategy might be better in the given context.

Thesis: Opening more stores is a good strategy for Sheng Siong to increase its profits.

By undertaking growth strategy where Sheng Siong expands its scale of production, it allows the firm to **achieve greater internal economies of scale**, thereby the firm could see lower long-run average costs as a result. Internal economies of scale refer to the cost saving accrued to the firm due to the expansion of its own output.

Sheng Siong can enjoy marketing economies through bulk purchase and bulk marketing. For example, they are now able to buy its food supplies in a bigger bulk and will be able to obtain a larger discount (lower price per unit) than if it was producing on a smaller scale. Thus, the cost per unit is lower for the large firm.

Moreover, growth strategy could help Sheng Siong increase its sources of revenue. Setting up more shops in different areas makes the shops more accessible to consumers. The increased accessibility may help Sheng Siong reach and capture more consumers, increasing total revenue earned. Moreover, opening of new shops could provide an opportunity for Sheng Siong to carry a larger range of products. Such firms are better able to cater to consumer needs, increasing their sources of revenue.

Taken together, the fall in costs of production and an increase in revenue will increase the profits made by Sheng Siong.

Anti-thesis: Opening more stores may not be a good strategy for Sheng Siong to increase profits.

When a firm expands beyond its optimum size, productivity declines and internal diseconomies of scale occur. This means the average cost of production will increase with higher output levels and this is mainly due to managerial diseconomies. As the size of Sheng Siong increases, it becomes increasingly difficult to carry out the management functions of co-ordination, control, and the maintenance of morale. Large organisations are subdivided into many specialised departments, which increase the likelihood of communication breakdown, hence making the task of coordinating more difficult. This may result in unnecessary wastage of resources and an increase in average cost.

Anti-thesis: There are other policies that can help Sheng Siong to increase its profits.

Product innovation:

Product innovation will focus on creating a real difference between the Sheng Shiong's products and its competitors'. This is done by enhancing the quality or variety of products offered. For example, Sheng Shiong may collaborate with celebrity chefs like Chef Chan Hon Meng to create ready-to-eat and affordable hawker food. When product differentiation is successful, it would shift consumers' preference towards the firm's product, away from its competitors, increasing demand for its product. Furthermore, this reduces the closeness of its substitutes. This also makes the demand more price inelastic. Suppose AC and MC remains unchanged, profits will increase.

However, consumer preferences are highly dynamic in nature. Even if product innovation is based on market research of consumer preferences, by the time new or improved products are rolled put, consumer preferences may have already changed. As such, engaging in product innovation may not increase demand.

Process innovation:

Process innovation comprise of improved production processes that can increase productivity of factor inputs or make the production process more efficient.

Sheng Siong could adopt more contactless payment technology like payWave which helps to shorten payment process, and reduce the amount of physical registers needed, lowering fixed cost. Suppose demand and average revenue curve remains unchanged, profits will increase.

However, the success of process innovation depends on how well the managers understand the current production process to implement a suitable innovation. If the managers do not have sufficient understanding, it is likely that the process innovation may not be well thought out such that it does not end up significantly reducing average cost.

Evaluation:

To conclude, it might be necessary for the firm to adopt a mix of strategies for the justifications given above to increase its profits.

Mark Scheme

Level	Descriptors	Marks

L3	For a well-developed explanation on how opening more stores (growth) increases Sheng Shiong's profits, limitation of growth strategy AND an alternative strategy to increase profits.	8-10
L2	For a well-developed explanation on how opening more stores increases profits and an alternative strategy to increase profits OR limitation of opening more stores. Answer is applied well to context of Sheng Siong. OR For an under-developed explanation on how opening more stores increases profits, limitation of lowering prices AND an alternative strategy to increase profits	5-7
L1	For an under-developed and descriptive explanation on how opening more stores increases profits. • Smattering of points • Descriptive answer lacking in economic analysis on the strategies used by Sheng Siong to increase profits • Significant lapses in explanation / analysis	1 – 4
E3	For answer that arrives at an analytically well-reasoned judgment on whether opening more stores is the best strategy to increase its profits, based on 2 criteria.	4 – 5
E2	For answer that arrives at an analytically well-reasoned judgment on whether opening more stores is the best strategy to increase its profits, based on 1 criteria only.	2 – 3
E1	For an answer that gives an unsupported statement on whether opening more stores is the best strategy to increase its profits.	1

4.

(a) Explain how a high rate of inflation and a deficit on the current account of the balance of payments can lead to serious problems for an economy. [10]

(b) Discuss whether a reduction in expenditures is likely to be the best policy measure in reducing a deficit on the current account of the balance of payments of an economy. [15]

Introduction:
A low rate of inflation and a favourable balance of payments are two of four key macroeconomic objectives which are important for any economy to achieve. Failure to do so could lead to serious problems and negative consequences on the economy, in particular its national income (NY), employment and standard of living.

Consequences of a high rate of inflation:
A high rate of inflation refers to a sustained, excessive and general increase in the prices of goods and services.

As prices increase, this reduces the purchasing power of money as each dollar can now buy fewer goods and services compared to before. This can cause problems for fixed income earners such as salaried workers and pensioners as they suffer a fall in their real income i.e. the quantity of goods and services it can buy and hence worsen their material standard of living.

A high rate of inflation can also bring about greater uncertainties in business transactions. Rising prices makes future costs, prices of products and the rates of return on investments less predictable. As a result, investors' confidence are eroded and firms would be reluctant to take undertake risks to increase investment (both domestic investment and foreign direct investment). The decrease in fixed capital investment can cause AD to fall, and firms will decrease output and hire less fewer factors of productions such as labour, leading to higher unemployment. Besides the fall in NY, the fall in investment can also have detrimental impact on the productive capacity of the economy in the long run, leading to a slower rate of economic growth.

Consequences of a deficit on the current account of the balance of payments:
A deficit on the current account of the balance of payments very likely occurs when the receipts from the exports is lesser than the payments for imports of goods and services, i.e. a deficit on the balance of trade account which is an important component of the current account.

Since the amount of imports is higher than that of exports when an economy runs a deficit on its balance of trade, this leads to greater outflows of currency. There is an increase in the supply of the domestic currency in the forex market as consumers sell the domestic currency for other currencies in order to pay for imports. This leads to a depreciation of the country's currency which can cause serious problems such as imported inflation since imports are more expensive in domestic currency. This is especially detrimental for import-reliant economies as price instability can lead to negative consequences on material standard of living explained above as well as a loss of cost-competitiveness since exports have high import-content.

LORMS

Level	Description	Marks
L3	Well-developed explanation of at least 2 negative consequences of a high rate of inflation and a deficit on the current account of the balance of payments of an economy.	8-10
L2	An undeveloped explanation of at least 2 negative consequences of a high rate of inflation and a deficit on the current account of the balance of payments of an economy.	5-7
L1	Descriptive explanation of some negative consequences of a high rate of inflation or a deficit on the current account of the balance of payments of an economy.	1-4

(b) Discuss whether a reduction in expenditures is likely to be the best policy measure in reducing a deficit on the current account of the balance of payments of an economy. [15]

Whether the use of expenditure-reducing policies is likely to be the best policy measure depends on several factors such as the root cause of the deficit on the balance of trade and the state of the economy.

LORMS

Level	Description	Marks
L3	Well-developed discussion of how expenditure-reducing and expenditure-switching policies can help to reduce a deficit on the current account of the balance of payments of an economy.	8-10
L2	An undeveloped discussion of how expenditure-reducing and expenditure-switching policies can help to reduce a deficit on the current account of the balance of payments of an economy.	5-7
L1	Descriptive explanation of how expenditure-reducing or expenditure-switching policies can help to reduce a deficit on the current account of the balance of payments of an economy.	1-4

Level	Description	Marks
E3	Analytically well-reasoned judgement about relative appropriateness of expenditure-reducing and expenditure-switching policies in helping to reduce a deficit on the current account of the balance of payments of an economy.	4-5
E2	Some attempt at a judgement about relative appropriateness of expenditure-reducing and expenditure-switching policies in helping to reduce a deficit on the current account of the balance of payments of an economy.	2-3
E1	Unsupported statement about relative appropriateness of expenditure-reducing and expenditure-switching policies in helping to reduce a deficit on the current account of the balance of payments of an economy.	1

Introduction:
To deal with a deficit on the current account of the balance of payments very likely brought about by a deficit on the balance of trade, a government can implement expenditure-reducing policies. To decide if that is the best policy measure, we will need to compare the cost and benefit against other alternatives such as expenditure switching policies.

(i) Expenditure-reducing Policy: Contractionary FP (or CMP)
One way to reduce expenditure is through contractionary fiscal policy where the government reduces its expenditure (G), e.g., postpone infrastructure building and/or an increase in personal income tax and corporate tax to discourage consumption (C) and investment (I) expenditures respectively. The fall in G, C, I will lead to a fall in aggregate demand (AD), firms will decrease production by hiring less factor inputs, which yields less income for households, thus reducing induced consumption over multiple time periods. Ultimately, NY will fall by a multiple of the initial fall in AD. The fall in NY will in turn reduce the economy's ability to spend on imports thereby reducing the balance of trade deficit.

Limitation:
However, the use of contractionary fiscal policy to reduce expenditures might prove ineffective in reducing the balance of trade deficit due to time lags. Implementation lag could be rather long since cuts in government expenditure need to be debated and passed in parliament before they can be implemented. In particular, cuts in spending on social infrastructure (e.g., education, healthcare) are likely to meet strong resistance. Even after the approval is given, it still takes a considerably long time for households and firms to respond before the full multiplier effect can be felt.

(ii) Expenditure-switching Policies
The government can also use supply-side policies to switch expenditure from imports to domestically produced goods and to switch foreign expenditure towards the purchase of the country's exports. When the government subsidises firms to encourage worker training and R&D to increase productivity, this reduces the cost of production as well as improve the quality of goods and services. This helps the economy to regain or develop its comparative advantage resulting in improved competitiveness, export revenue would rise and import expenditure fall, reducing the balance of trade deficit in the long run.

Limitation:
However, supply-side polices could be ineffective especially in the short run, as it usually takes a fairly long time period for training and R&D to yield results and meanwhile substantial government funding has been expended. In addition, the intended results are not guaranteed as the effectiveness of training depends on many factors such as aptitude and attitude of workers, and R&D efforts may not lead to significant technological breakthrough after all.

Conclusion:

5. "Inflation is not the only challenge facing Singapore. Structural changes exist domestically and worldwide. These include an ageing population, increased geopolitical risks and climate change. Hence, we must accelerate economic reforms to raise productivity."

Mr Lawrence Wong, Deputy Prime Minister

(a) Explain the likely economic consequences of these structural changes for Singapore's economy. [10]

(b) Discuss the policy measures that the Singapore government should take to address the economic consequences of these structural changes on her economy. [15]

Mark Scheme (a)

Knowledge, Application/ Understanding and Analysis	
L3	For an answer that uses appropriate analysis (e.g. AD-AS diagram) to link the structural changes to AD, SRAS and/ or LRAS. Explicit reference to be made to ≈3 of the following: - ↑COP / ↓SRAS ↑GPL - ↓SRAS/ AD ↓ actual growth + ↑unemployment - ↓LRAS ↓ potential growth - Worsening BOP position	8-10
L2	For an answer that gives a descriptive explanation of economic consequences arising from the structural changes.	5-7
L1	Smattering of valid points	1-4

Mark Scheme (b)

Knowledge, Application/ Understanding and Analysis	
L3	Developed discussion of ≥2 policies adopted by the Sg govt to address the economic consequences of structural changes on the economy. 'Developed' – Able to explain + link each policy explicitly to how they mitigate the adverse effects explained in (a). This should be followed by limitations of the policy.	8-10
L2	Undeveloped discussion OR developed explanation for 1 policy only. 'Developed' – Able to explain + link each policy explicitly to how they mitigate the adverse effects explained in (a). This should be followed by limitations of the policy. 'Undeveloped' – Descriptive rather than analytical, superficial link to context and preamble.	5-7
L1	Smattering of valid points	1-4
E3	Evaluative appraisal of the policies of the relative effectiveness of the policies in view of structural changes happening.	4-5
E2	Some attempt at an evaluative appraisal of the relative effectiveness of the policies in view of structural changes happening.	2-3
E1	Unsupported concluding statement about the appropriateness of each policy.	1

Part (a)

INTRO
- Identify from the preamble the structural changes that exist domestically and worldwide:
  (1) Ageing population
  (2) Increased geopolitical risks
  (3) Climate change
- For each structural change, explain how they affect the key economic variables. There should also be reference made to and AD-AS diagram to show economic analysis.

DEVT
(1) Ageing population:
(i) Explain how a rapidly ageing population, together with a fall in working age population can affect equilibrium wage. Specifically, using the supply of and demand for labour diagram that shows a fall in supply leading to a rise in the equilibrium wage.
- Following from the rise in equilibrium wage, explain how this leads to a fall in aggregate supply with a potential decline in real GDP and a rise in the GPL.
- Besides cost push inflation, students can also link to how this makes Sg exports lose competitiveness, which in turn affects Sg's BOT position.

(ii) Besides SRAS, this structural change may also affect aggregate demand if MNCs are deterred from entering Sg.
- If so, the potential decline in foreign direct investment might lead to adverse impact on Sg's financial account position.
- Alternatively, there may also be a fall in investment should the MNCs be discouraged from setting up plants in Sg. This fall in investment in turn causes a fall in aggregate demand.
- Fall in aggregate demand leads to multiple fall in national income, coupled with raise in unemployment.
- Depending on the initial state of economy, the general price level may or may not fall.

(iii) Ageing population may be associated with falling productivity
- Combined with shrinking resident labour pool, this may lead to reduction in quantity and quality of labour.
- Consequently, long run aggregate supply may fall and affect potential economic growth.
- Students should show this on the AD-AS diagram where there is a leftward shift of the long run aggregate supply curve, resulting in a leftward shift of the full employment output Yf.

(2) Increased geopolitical risks
- Conflicts between countries have fueled existing inflationary pressures, leading to higher production costs for firms when they import raw materials for production.
- This in turn fuels cost push inflation due to the fall in short run aggregate supply.
- Students should link the above explanation to AD-AS diagram as well to show the rise in general price level, coupled with a fall in income.

(3) Climate change
- Climate change results in erratic weather conditions. In turn, this affects crop growth and will reduce their supply across a range of agricultural products.

- Subsequently, this pushes up the price of such products and in turn, affect firms' cost of production.
- Similar to above structural changes, there will be fall in short run aggregate supply leading to rise in general price levels.
- Students can also link this to the impact on exports competitiveness and in turn, balance of trade position.
- Reference can be made to diagram drawn earlier to illustrate previous two structural changes.

Part (b)

INTRO
- Acknowledge that the economic consequences of the structural changes include:
(1) Cost push inflation
(2) Adverse impact on actual and potential economic growth
(3) Worsening of BOP position
- The above consequences will hurt Singapore's competitiveness, either because of exports are going to become more expensive OR Singapore becomes less attractive as a foreign direct investment destination.
- Link to preamble that the policies must predominantly aim to raise productivity. However, in the short term, other measures may also be needed.

DEVT
- Explain how supply side policies work to increase the quantity and/ or quality of factors of production.
- If successful, these policies can increase Singapore's productive capacity and in turn shift long run aggregate supply curve to the right.
- Explain two supply side policies, namely:

(1) Productivity Solutions Grant (PSG)
- Explain how this measure supports businesses i.e. PSG covers sector-specific solutions including the retail, food, logistics, precision engineering, construction and landscaping industries. Other than sector-specific solutions, PSG also supports adoption of solutions that cut across industries, such as in areas of customer management, data analytics, financial management and inventory tracking.
- These solutions have been pre-scoped by various government agencies such as Enterprise Singapore, National Environmental Agency (NEA) and Singapore Tourism Board (STB)
- Students must use examples to show how the PSG can lead to a rise in quantity and/ or quality of both capital and labour.
- Reference should also be made to the AD-AS diagram to show how the measure can shift the long run aggregate supply curve to the right and thus bring about potential economic growth.

(2) Workfare Skills Support Scheme (WSS)
- Explain how this measure supports workers in terms of skills upgrading.
- WSS encourages low wage workers to undertake training that leads to more impactful employment outcomes.
- Eligible individuals may receive training allowance for selected courses that individuals had paid for themselves as well as a cash reward for completing training.
- Students must link this measure to how it addresses labour shortage arising from the ageing population.

- Following the above, the limitations of both PSG and WSS need to be given.
- Specifically, for training, the time lag may be relatively long and success may not be guaranteed. As a result, productivity may not increase quickly.

(3) Other policies besides SSPs
- While the above SSPs may be relevant in addressing some consequences resulting from the structural changes, it is important to note that in the short run, issues such as cost push inflation may need other measures.
- Specifically, the Monetary Authority of Singapore (MAS) has tried to keep the Singdollar on a gradually appreciating stance because this will help to keep out imported inflation and cost push inflation.
- A stronger Singdollar raises the price of exports but reduces the price of imports. The latter works to address rising commodity prices due to increased geopolitical risks and climate change.
- Alternatively, students can also explain measures that help firms reduce cost of production. This includes measures such as rental rebates, utilities rebates or wage subsidies.
- For these measures, students should illustrate its workings using the AD-AS diagram, where the short run aggregate supply curve should rise and bring about a fall in general price level.

6. The U.S.' persistent trade deficit with China has led to an ongoing trade war between the two countries. The U.S. government has imposed tariffs on Chinese imports such as electrical machinery, hard disks and iron and steel products amidst concerns over China's extensive use of industrial subsidies. In turn, China has imposed a number of retaliatory tariffs on U.S. imports such as agricultural products, automobiles and liquor.

(a) Explain how the use of such protectionist policies might affect a country's balance of trade. [10]

Define protectionism & balance of trade

Protectionist policy #1: Import tariff	Protectionist policy #2: Export subsidy

Explain what it is
- tax on imported gds
- implemented in mkts where domestic industry does not possess comparative advantage/ is not as competitive as imported substitutes
- obj: protect mkt share of dom prs since imported substitutes will be relatively more expensive

Draw diagram
(diagram not required)

Figure 1: Effects of import tariff on the market for good A

Explain how it works (i.e. BOT can improve or worsen depending on assumptions/ conditions)

with import tariff:
- ↑P of imports from Pw to Pw+t
- ↓Q of imports from Q1Q2 to Q3Q4
∴ ↓import expenditure   improvement in BOT (assume export earnings un∆)

The **↓import expenditure** assumes that PED for imports > 1 i.e. ↑P of imports   MTP ↓ Qty DD of imports   ↓ import expenditure (**& improvement in BOT**)

(e.g. student can analyse impact of tariff on mkt for Chinese liquor)

This may be true in the case of China's liquor market, since China also has a sizeable liquor industry. When imported U.S. liquor becomes more expensive due to

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Explain what it is
- Export subsidy has a more targeted impact on exports
- Govt provides export sector with favourable subsidies to ↓COP   ↑competitive advantage over other foreign exporters

(diagram not required)

E.g. Chinese govt subsidise cost of electrical machinery ↑SS of Chinese electrical machinery   ↓ P of electrical machinery (i.e. Chinese exporters granted unfair advantage in selling electrical machinery in foreign mks)

Where PED for electrical machinery is likely > 1, given availability of substitutes in global mkt, ↓ P of Chinese electrical machinery   MTP ↑Qty DD for Chinese electrical machinery   → Chinese export earnings

Assuming China's import expenditure remains un∆, ↑ export earnings leads to improvement in China's BOT

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tariff, local consumers in China are more willing and able to switch to domestic suppliers

On the other hand, if a country is resource-poor like SG, then many of the imported foods lack domestic substitutes. In this case, PED for imports < 1. Thus, imposition of tariff on such goods may instead increase import expenditures, thereby **worsening these resource-poor ctry's BOT**

OR

Export earnings may not remain un∆ esp. if there are spillover effects on other domestic industries
e.g. if U.S. automobile exporters are dependent on China for its cheap steel, then the tariffs it imposes on China's steel may backfire by raising production costs for U.S. exporters. This then translates to higher prices for U.S. automobile exports, reducing U.S. export earnings

Thus, whether U.S.' BOT improves **depends on whether the ↓ import expenditure > the ↓ export earnings**

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able to switch to other cheaper foreign or domestic suppliers

Ctries that have diversified their import sources, BOT is still likely to improve given how exporters are better able to switch to other cheaper foreign or domestic suppliers

All in all, use of protectionist measures like import tariffs and export subsides affect trade by influencing a ctry's trade balance by manipulating the price-competitiveness of dom gds v.s. foreign gds

Mark Scheme (a)

Knowledge, Application/ Understanding and Analysis		
L3	For an answer that uses appropriate analysis (e.g. tariff diagram) to explain how protectionist policies can affect balance of trade position.	8-10
L2	For an answer that gives a descriptive explanation of protectionist policies with/ without brief mention of how they could affect balance of trade position.	5-7
L1	Smattering of valid points	1-4

(b) Discuss the view that protectionism can never be justified. [15]

Thesis: Protectionism cannot be justified (give 1 reason; well-explained)	Anti-Thesis: Protectionism can be justified (give 2 reasons; well explained)
Theory of comparative advantage states: - trade will be mutually beneficial to countries as long as each of them have comparative	Protect dom infant industries

advantage in the production of one good over the other i.e. they can produce a particular good at a lower opportunity cost compared to another

Thus, economic welfare can be maximized if countries are able to specialize in the production of g/s in which they have the lowest opportunity cost and then trade with another for goods in which they have comparative disadvantage

China may have a comparative advantage in producing hard disks and thus should be allowed to sell its goods to the U.S. at the low prices and not be subjected to tariffs imposed by the U.S. government
- doing so only raise the price paid by the domestic & foreign consumers & reduce the amount that can be consumed. Higher prices also lead to less consumer surplus and society suffers from deadweight loss

Furthermore, protection of local exporters might encourage complacency & inefficiency (e.g. productive/ dynamic inefficiencies) lower consumers' welfare

e.g. China may want to protect its infant industry in liquor production

By imposing tariffs on U.S. liquor imports, China allows time for its dom liquor exporters to reap IEOS ↓AC gain CA over foreign competitors

Tariff revenue collected by Chinese govt can also be ploughed back into research/ infrastructural projects to facilitate growth & expansion of infant industries

Upon gaining CA, China will be able to export its Chinese liquor to global mkt ↑NX improve BOT/ ↑dom Nt

Protect against dumping

The U.S. may suspect China of engaging in predatory dumping by selling its Chinese goods in U.S. mkt at artificially low prices (that cld undercut those of dom subsitutes)

The U.S. might then want to impose tariffs to prevent U.S. dom producers from being driven out of mkt and prevent Chinese firms from establishing monopolistic power in the dom country which could have negative consequences in the long run i.e. higher prices to boost firm's profits, artificially restricted output that reduce consumer surplus

The U.S. may also want to reverse its persistent BOT deficit with China given its

disproportionately high import expenditures

v.s. export earnings

Mark Scheme (b)

	Knowledge, Application/ Understanding and Analysis	
L3	Developed discussion of any 3 valid reasons for and against protectionism.	8-10
L2	Undeveloped discussion OR developed explanation for either stand (i.e. for or against protectionism only)	5-7
L1	Smattering of valid points	1-4
E3	Evaluative judgement of circumstances under which protectionism could be justified.	4-5
E2	Some attempt at an evaluative judgement.	2-3
E1	Unsupported concluding statement.	1