



**CANDIDATE NAME**

**CT GROUP**

**21**

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**ECONOMICS**

Paper 1 Case Study Questions

**8823/01**

**12 September 2022**

**3 hours**

Additional Materials: Answer Booklet

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**READ THESE INSTRUCTIONS FIRST**

Read all instructions printed on the cover page of the 12-page answer booklet carefully.

Write all your particulars clearly on the cover page of the 12-page answer booklet.

Write in dark blue or black pen on both sides of the paper.

You may use a soft HB pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid and tape.

Answer ALL questions.

Write all your answers in the 12-page booklet and subsequent 4-page booklets (if required).

Do all your rough work in pen using the answer booklet and cross it through without making it illegible.

Do not tear out any part of this booklet.

Begin case study question 1 and question 2 on a new page within the answer booklet.

All work must be handed in. If you have used any additional 4-page booklets, please insert them inside the 12-page answer booklet.

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

You may use a calculator.

You are advised to spend several minutes reading through the questions before you begin writing your answers.

You are reminded for the need for good English and clear presentation in your answers.

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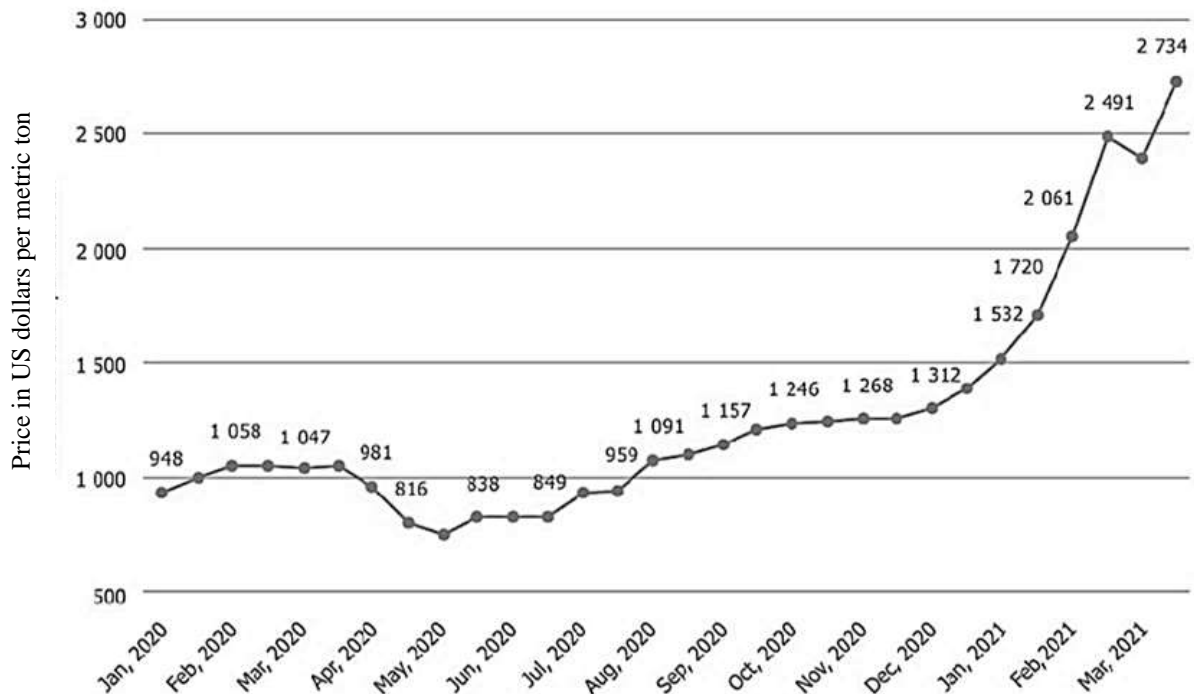
This document consists of **9** printed pages and **1** blank page.

**[Turn over**

Answer **all** questions

### Question 1: The market for face mask

**Figure 1: Global price in polypropylene (PP) from January 2020 to March 2021  
(US dollars per metric ton)**



Source: <https://www.researchgate.net>, accessed on 27 May 2022

### Extract 1: The global face mask market

The market revenue of protective face masks will cross US\$7.1 billion by 2027. Increasing prevalence of COVID-19 infection across the world will positively influence the market growth. According to the US Centre for Disease Control & Prevention (CDC), approximately 120 million individuals are suffering from COVID-19 infection across the world. To overcome this situation, several authorities such as CDC and World Health Organisation (WHO) have advised the use of face masks to reduce the unintended spread of infections. Also, due to a rise in the number of cases, there has been a global surge in demand for masks for personal health. To overcome such shortcoming, manufacturers are ramping up the production across the globe.

Source: *Global Market Insights*, 22 March 2021

### **Extract 2: Bottlenecks in the face mask value chain**

Factor inputs for face masks can be in short supply and are hard to manufacture quickly. In terms of inputs, oil and metal are the main raw materials for the manufacture of non-woven materials, metal strips and ear loops. The main bottleneck in the value chain in terms of inputs has been the non-woven fabric manufactured with polypropylene.

Polypropylene (PP) is a form of manufactured plastics which is derived from oil. It is commonly used in baby diapers, disposable wipes, as well as in the automotive and construction industries. However, the specific substance used for face masks - PP electret melt-blown non-woven, is a specialised fabric produced by a limited number of companies globally due to the high initial investment required in heavy machinery. For this reason, it has been more difficult to increase production during the crisis, or to find companies that can switch to this manufacturing within a reasonable time and without massive investment.

Source: *OECD*, 4 May 2020

### **Extract 3: Shortage in the market for face mask**

Across China and in Hong Kong, but also as far afield as San Francisco and Rome, in stores, shelves have been swept clean of face masks amid surging demand. This has given rise to a simple question, but no easy answers: how to address the mask shortage so that those who need them can get them?

One approach, offered by most economists, is to let market forces do the work. This means allowing sellers to charge higher prices in response to surging demand. Basic economic theory posits that when demand outstrips supply, producers tend to raise prices. Those who can and want to pay the higher price, for example, people at the highest risk of exposure or transmission - get their hands on the scarce masks. Prices rise until a new equilibrium is reached, that is, when demand again matches supply. In Hong Kong, that means prices for much sought-after masks have skyrocketed.

The thought of profiting off people's very real fears of an epidemic may be off-putting, and governments understandably try to stop this kind of dramatic price increase. But whether putting a cap on prices achieves its intended effect of allocating masks more effectively and fairly is another matter. Many economists think price cap distorts the market and makes it harder for people to access much-needed supplies. The argument is that artificially suppressing prices incentivizes people to hoard products when they can get it, worsening the shortages.

Source: *Quartz*, 4 February 2020

**[Turn over**

#### **Extract 4: Infectious disease prevention and preparation in Singapore**

Singapore gained international recognition in its efforts to mitigate the spread of the virus, keeping infection rates low in the initial months of the COVID-19 outbreak. This was largely due to their pandemic taskforce which was established soon after the outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003.

Since SARS, the country has invested heavily in infectious disease prevention and preparation. As soon as the COVID-19 outbreak was announced by WHO on 31 December 2019, Singapore's pandemic taskforce acted quickly, implementing risk mitigation measures as early as 2 January 2020. These measures included border control, mandatory 14-day quarantining for all returning residents and contact tracing thus reducing community transmission. For the month of February 2020, Singapore did not experience any exponential growth of infections of COVID-19.

Source: <https://www.ncbi.nlm.nih.gov/pmc/PMC7795346/>, accessed on 28 July 2022

#### **Extract 5: Coordinated public action in the pandemic**

With infectious diseases like COVID-19, how one person behaves necessarily affects other people's wellbeing. To achieve good overall outcomes for society, it is not enough to rely on individuals' incentives to protect themselves.

In the context of infection control, there are many ways to help people factor in their costs or benefits on third parties. For example, the government can offer subsidies for personal protective equipment, like face mask, to encourage people to help protect themselves. Other indirect measures include statutory sick pay schemes that encourage people who may be infected or have symptoms to stay at home to avoid spreading the disease further. As a last resort, one can consider imposing fines on those who do not wear face masks in public or who do not respect social distancing restrictions. Such fines have recently been introduced in the UK.

In addition to providing explicit incentives such as subsidies and fines, there are other measures that can be used to encourage people to protect themselves and each other better. Clear communication on the costs of infections may be used to help foster better social norms.

Source: <https://www.economicsobservatory.com/>, accessed on 27 May 2022

## Questions

- (a) (i) Using Figure 1, compare the change in the global price in polypropylene (PP) between September 2020 and December 2020 with that between December 2020 and March 2021. [2]
- (ii) Using evidence from Extract 2 where appropriate, explain why the likely value of price elasticity of supply (PES) of PP for face mask production is likely to be positive **and** low. [3]
- (iii) Using Extract 1 and PES value stated in (a)(ii), use a demand/supply diagram to account for the price variation of PP **after** December 2020, and comment why the price variation might not continue in the long term. [7]
- (b) Discuss the view that ‘putting a cap on prices achieves its intended effect of allocating masks more effectively **and** fairly.’ (Extract 3) [8]
- (c) Identify and define the characteristics of public good, and carefully explain why the service provided by Singapore’s ‘pandemic taskforce’ is considered a public good. [7]
- (d) Merit goods are a category of private goods which are deemed to be socially desirable by the government and are under-consumed.
- Making reference to Extract 5, explain why there might be under-consumption of face masks, an example of merit good. [8]
- (e) Using appropriate data from various extracts, discuss whether the provision of government subsidies would be the best policy to ensure merit goods are allocated more efficiently in a society. [10]

[Total: 45]

[Turn over

## Question 2 Singapore economy and the pandemic

**Table 1: Selected economic indicators for Singapore, 2020  
(year-on-year quarterly change)**

|  | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
|--|-----------|-----------|-----------|-----------|
| Real Gross Domestic Product (GDP) growth (%)         | 0.0       | -13.3     | -5.8      | -2.4      |
| Inflation Rate<br>(% change in Consumer Price Index) | 0.4       | -0.7      | -0.3      | -0.1      |
| Unemployment Rate (%)                                | 2.5       | 2.9       | 3.4       | 3.2       |

Source: *Economic Survey of Singapore 2020*

### Extract 6: The performance of the Singapore economy in 2020

The COVID-19 pandemic caused massive global economic disruptions in 2020. Singapore was not spared as the economy recorded its worst full-year recession since independence. During the year, the economy had to grapple with both demand- and supply-side shocks, such as a fall in external demand for goods and services produced in Singapore caused by the economic slowdown in major economies and global travel restrictions, supply chain disruptions, as well as the implementation of the Circuit Breaker (CB) measures domestically from April to June 2020.

Across sectors, the economic impact of COVID-19 was felt through different transmission channels. Consequently, their economic performance, including their recovery post-CB, was varied. For example, while the indicators for external demand were close to pre-pandemic levels by the fourth quarter of 2020, air passengers and tourist arrivals remained significantly lower than pre-pandemic levels as of end-2020.

Furthermore, significant risks in the global economy remain. While Singapore's vaccination programme is well underway since early 2021, there is uncertainty over how the COVID-19 pandemic will evolve around the world given the emergence of new strains of the virus and difficulties in vaccine rollouts globally.

Overall, Singapore's GDP is projected to gradually recover and expand by 4 to 6 percent in 2021, with GDP not likely to return to pre-COVID levels until the second half of the year at the earliest. The pace of recovery is also expected to be uneven across economic sectors in 2021. For instance, while outward-oriented sectors are likely to benefit from the pickup in global economic activity, activity levels in tourism- and aviation-related sectors are projected to remain below pre-pandemic levels even by the end of 2021.

Source: Excerpts from *Economic Survey of Singapore, 2020*

### **Extract 7: Consumer spending hit by Circuit Breaker measures**

About 60 percent of consumer spending in Singapore has been hit by Circuit Breaker measures to tackle the COVID-19 outbreak. Among the sectors affected are transport, clothing and footwear, as well as recreation and culture, the Monetary Authority of Singapore (MAS) said in its twice-yearly macroeconomic review on April 28. Visits to restaurants, malls and other recreational places such as public parks have also declined by about 60 per cent.

The MAS highlighted that inflation is expected to moderate during this economic downturn, with benchmark oil prices forecast to stay low due to worldwide lacklustre demand. While global food supplies are ample, supply chain disruptions arising from international containment measures could lead to a temporary rise in prices of some imported food items, it noted.

Shifts in retail spending are expected in the short term, as households increase spending on daily necessities and reduce their expenditure, especially on luxury and durable goods in anticipation of more layoffs and uncertain economic prospects. Food and beverage outlets near residential areas which are open for takeaway or delivery, may also outperform higher-end restaurants which tend to be located in business districts, the central bank said.

Source: *Straits Times*, 28 April 2020

### **Extract 8: Singapore's four Budgets in 2020**

In less than four months since February 2020, the Singapore Government rolled out four fiscal Budgets to support workers and businesses here during the ongoing COVID-19 pandemic. This is unprecedented since only one budget is usually sufficient to meet the needs of a fiscal year.

Through the Unity, Resilience, Solidarity and Fortitude Budgets, Singapore has put aside almost S\$100 billion – or almost 20 per cent of its GDP – to counter the impact of the virus. Of this amount, S\$52 billion comes from past reserves.

“Adding the COVID-19 response to our usual spending, the total size of our four Budgets stands at S\$193 billion. This is more than double the size of our annual Budgets in preceding years,” said Mr Heng Swee Keat, the Deputy Prime Minister. “In other words, we are looking to spend in one year what we would have done in two years or more in normal times.”

Singapore's four Budgets are estimated to help its economy cushion average output loss of 5 percentage points, and to prevent large scale job losses over 2020 and 2021, citing a recent study by the Monetary Authority of Singapore.

Source: various

**[Turn over**



**Table 2: Changes in Monthly Household income for Singapore by percentile, 2019 to 2020\***

| Percentile      | 1 <sup>st</sup><br>to<br>10 <sup>th</sup> | 11 <sup>th</sup><br>to<br>20 <sup>th</sup> | 21 <sup>st</sup><br>to<br>30 <sup>th</sup> | 31 <sup>st</sup><br>to<br>40 <sup>th</sup> | 41 <sup>st</sup><br>to<br>50 <sup>th</sup> | 51 <sup>st</sup><br>to<br>60 <sup>th</sup> | 61 <sup>st</sup><br>to<br>70 <sup>th</sup> | 71 <sup>st</sup><br>to<br>80 <sup>th</sup> | 81 <sup>st</sup><br>to<br>90 <sup>th</sup> | 91 <sup>st</sup><br>to<br>100 <sup>th</sup> |
|-----------------|---|--|--|--|--|--|--|--|--|---|
| Real change (%) | -6.1                                      | -3.2                                       | -2.2                                       | -2.0                                       | -1.5                                       | -1.4                                       | -2.2                                       | -2.0                                       | -1.8                                       | -2.3  |

\*real change in average monthly household income from work per household member among resident employed households by percentiles

Source: *Department of Statistics, Singapore*

### Extract 9: Singapore household “worse off” in 2020

Median household incomes fell last year as Singapore's economy shrank, but had increased over the last five years, according to a paper released by the Singapore Department of Statistics (DOS). The median monthly household income from work fell by 2.5 percent from S\$9,425 in 2019 to S\$9,189 in 2020, reflecting the impact of the COVID-19 pandemic.

This trend held true for households across income groups, it said. DOS said that lower-income households in the 1st to 60th percentile saw a S\$37 to S\$49 drop in their average household income per member, whereas higher-income households in the 61st to 100th percentile had their income fall between S\$96 and S\$337.

However, their incomes all grew in the five years from 2015 to 2020, with increases ranging from 0.6 to 2.9 per cent a year. The income divide as measured by the Gini coefficient was the lowest in two decades, as government transfers closed the gap in its effort to make the country more inclusive.

Singapore's Gini coefficient in 2020 fell to 0.375 after government transfers. "This can be attributed to the significant amount of government support provided during the COVID-19 crisis in 2020 such as rental, water and electricity rebates, especially for households staying in the smaller HDB flats," said DOS in a media release. Resident households received S\$6,308 per household member on average from various Government schemes in 2020, which was higher than the S\$4,684 received the year before. Another measure to make Singapore more inclusive includes the use of the Progressive Wage Model. Under the model, lower-wage workers in the cleaning, security and landscape sectors will be guaranteed minimum pay. In order to progress up the job ladder and pay scale, they will undergo subsidised training and improvements in productivity and standards.

Source: adapted from *Channelnewsasia*, 8 February 2021



## Questions

- (a) With reference to Table 1, describe Singapore's real GDP, general price level and unemployment rate in 2020. [6]
- (b) Explain the likely impact on an economy's aggregate demand and aggregate supply in 2020 based on the information found in Extract 6. [6]
- (c) Explain how the Circuit Breaker measure affected the standard of living in Singapore. (Extract 7) [4]
- (d) Explain the intended consequence of a gradual and modest appreciation policy in Singapore and comment how the changes in prices of crude oil and food (in Extract 7) affected Monetary Authority of Singapore (MAS) decision **not** to implement such a measure in 2020. [7]
- (e) Budget spending may result in conflict between economic growth and inflation.  
Explain the above statement and discuss if this is the main reason for the Singapore government to consider an unprecedented four Budgets for 2020. [8]
- (f) With reference to the data, explain whether lower-income households in Singapore were "worse off" in recent years. [4]
- (g) Discuss if the measures to make Singapore more inclusive should be removed or enhanced in the future. [10]

[Total: 45]

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### Copyright Acknowledgements:

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|------------|-----------|--|
| Question 1 | Figure 1  | © <a href="https://www.researchgate.net">https://www.researchgate.net</a> accessed on 27 May 2022  |
| Question 1 | Extract 1 | © Protective Face Mask Market revenue to cross USD 7bn by 2027: Global Market Insights Inc., 22 March 2021   |
| Question 1 | Extract 2 | © The face mask global value chain in the COVID-19 outbreak: Evidence and policy lessons, 4 May 2020   |
| Question 1 | Extract 3 | © The scramble for masks amid the coronavirus outbreak is a crash course in Econ 101, 4 February 2020  |
| Question 1 | Extract 4 | © <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7795346/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7795346/</a> , accessed on 28 July 2022   |
| Question 1 | Extract 5 | © <a href="https://www.economicsobservatory.com">https://www.economicsobservatory.com</a> , accessed on 27 May 2022  |
| Question 2 | Table 1   | © Economic Survey of Singapore 2020  |
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| Question 2 | Extract 7 | © 60% of consumer spending hit by coronavirus circuit breaker measures: MAS, Straits Times, 28 April 2020  |
| Question 2 | Extract 8 | © Singapore Budget 2020: COVID-19 Relief Measures for Singaporeans and Businesses, Economic Development Board, 23 June 2020; Parliament passes Fortitude Budget, 4th package of COVID-19 relief measures this year, Channelnewsasia, 5 June 2020 |
| Question 2 | Table 2   | © Department of Statistics, Singapore  |
| Question 2 | Extract 9 | © Household incomes fall in 2020 due to COVID-19 impact, but rose in past 5 years, Channelnewsasia, 8 February 2021  |

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