HWA CHONG INSTITUTION
C2 Preliminary Examinations
Higher 2

CANDIDATE NAME _____ **CT GROUP** 20

ECONOMICS
Paper 1 Case Study Questions

9757/01
23 August 2021
2 hours 15 minutes

Additional Materials: Answer Booklet

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.

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

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Answer **all** questions

Question 1: E-commerce giants and their impact on our planet

Extract 1: The rise of e-commerce

Global e-commerce firms operate marketplaces that connect buyers and sellers, enabling transactions between buyers and sellers for products that the retailers may never physically touch, or if they do, may never actually own. E-commerce is forecast to almost double by 2024, growing to US$6.5 trillion globally from last year's US$3.4 trillion. Interestingly, while e-commerce will outpace physical retail in growth rate, physical retail will also grow, and will still dwarf e-commerce.

Table 1: Global e-commerce market share of top 4 firms, 2019

Taobao.com	15%
TMall.com	14%
Amazon	13%
JD.com	9%

Source: *Forbes*, 21 October 2020

Extract 2: Alibaba undercuts Amazon in Europe to woo wary brands

Chinese e-commerce giant Alibaba Group, who owns Taobao and TMall, is finally making its move on Europe. It is undercutting Amazon sellers' membership fees to attract vendors (their customers) but has had mixed results. A flood of small businesses have joined its European platform, AliExpress, in recent months but some larger brands are holding back as they did not feel the site was the right showcase for their products. AliExpress has waived monthly rates for sellers in Spain to attract their business while commissions for goods sold are set at 5% to 8%. By comparison, it costs 39 euros per month plus sales tax to sell on the US company, Amazon, plus a commission for every object sold of 7% to 15%, with items like jewelry and Amazon device accessories commanding higher rates.

Amazon is the largest online shopping marketplace in its five main European markets: Britain, France, Germany, Italy and Spain, according to e-commerce analyst Marketplace Pulse. Thousands of small businesses have signed up to register on AliExpress in Spain since it was opened up to local sellers in 2019. That would compare favorably with established Amazon, which said more than 8,000 small Spanish businesses sold on its platform in 2018.

Source: *Reuters*, 8 January 2020

Extract 3: Amazon is facing increased regulatory scrutiny around the world

The e-commerce giant Amazon has bet big on India, even boasting on a company website last year about its ability to deliver to a remote Himalayan village 11,500 feet above sea level. Yet whether India continues to welcome Amazon is an open question. The country's policymakers recently raised alarm bells about what they describe as a "handful of companies" that "dominate the digital economy" and earlier this year instituted a rule change that forced Amazon to scale back aspects of its business in India. The country of more than 1.3 billion people is not the only place where Amazon is experiencing challenges. Three sets of regulators in Europe over the past year have opened investigations into whether Amazon is a threat to open competition, underscoring how foreign markets are demonstrating the type of concern about the company's power that is only beginning to draw attention in the United States. If policymakers in these countries end up moving to limit Amazon, in effect protecting homegrown businesses, that would present a barrier to continuing the company's record of unbridled growth.

Amazon has become a powerful marketplace alongside its role as an online retailer, with more than 2.5 million third-party sellers who have become global businesses on its platform. Early on, Amazon compelled sellers to use its warehouses to guarantee speedy Prime shipping, in addition to other programs that largely benefited shoppers. They include charging sellers thousands of dollars to speak to account managers, as well as making it necessary to purchase ads to guarantee the top spot on a search page. As much as a third of every dollar merchants make goes back to Amazon. That helped Amazon generate $42.7 billion in revenue from seller services such as fees and commissions last year, a number that has nearly doubled in two years.

Sellers are a crucial piece of Amazon's business, and the company invests billions of dollars in digital tools and physical infrastructure to help them thrive, said spokesman Jack Evans. Evans disputes the company has prioritized profits over serving consumers, noting that it invests heavily in driving traffic to its site and improving its infrastructure, which benefits third-party sellers, too. Many of the company's fees are for optional services, and it has recently lowered some. Still, many third-party sellers say they worry about Amazon's dual role: a massive open marketplace and a giant competitor in that marketplace. Those sellers complain that Amazon's ever-increasing power has resulted in a system in which only a few can succeed, and only through paying up.

Source: *The Washington Post*, 28 May and 1 October 2019

Extract 4: Online shopping is polluting the planet

A growing consumer appetite for convenience – getting anything you want delivered to your front door by tomorrow in just one click – is taking its toll on the environment. By 2030, the demand for last-mile delivery (final leg of the journey to get a product to the consumer) is expected to grow 78% with online stores, e-grocers and food delivery services competing to offer faster home deliveries and urban last-mile delivery emissions are set to increase by more than 30% in 100 cities globally, according to a new study by the World Economic Forum. Not only that, but commutes could increase by 21%, taking up to 11 minutes longer due to the extra traffic on the road.

Paris Mayor Anne Hidalgo wants the e-commerce company, Amazon, to pay for the carbon emissions and traffic congestion that online shopping generates in the French capital. Amazon, she wrote in her proposal, was a "creator of precarity, congestion and pollution" and "an ecological disaster"; along with other services such as UberEats, the company should be charged a fee for its urban deliveries to offset the problems it causes. If Amazon and other companies decide to pass this burden on to their customers—and it would be hard to prevent them from doing so — city leaders could be blamed for making shopping less affordable in what is already one of the worlds' costliest cities.

While Amazon did not directly refute the criticism of their emissions record, it nonetheless highlights its Climate Pledge, which aims for carbon neutral deliveries by 2030 and carbon neutral operations by 2040. Amazon also says that its current global order of 100,000 of electric delivery vehicles is the largest yet made by any company. Such progress still lags behind that of some more-proactive companies currently working in France. The French postal service, for example, is already in the process of switching to electric and natural gas vehicles and bikes for the final mile of its deliveries, and by 2024, La Poste promises that its deliveries within Greater Paris will be entirely carbon neutral.

Given Amazon's global market share, Paris' plans hardly pose an existential threat. But in a climate where the environmental and economic effects of e-commerce are coming under increasing scrutiny from both legislators and the public, the city could be a trailblazer in the movement to rein it in.

Source: *World Economic Forum*, January 2020; *Bloomberg*, 28 November 2019

[Turn over

Extract 5: Why haven't e-commerce firms started carbon labeling yet?

E-commerce firms have made it easy to purchase more items online, but one large omission has been the lack of carbon labeling associated with each product sold online. Carbon labeling is the amount of carbon that has been emitted to produce a particular item. By having full transparency of the carbon emissions associated with products sold online, consumers would be truly empowered to adjust their purchasing preferences, in the same way that online purchases are currently driven by price comparisons, customer ratings and a variety of other factors.

One of the challenges mentioned by companies until recently has been the lack of investment in consistent data collection. Using Machine Learning algorithms, calculating the carbon footprint from raw materials to a factory's manufacturing and packaging processes, to warehousing and eventually transportation to a customer doorstep is data intensive. If trillions of data points are being collected on customer preferences and how to optimize websites, having a serious effort for product carbon labeling should be feasible, with the right leadership. With Amazon now pledging $2 billion toward a climate change fund, using some of these funds to invest in the capabilities of the Amazon platform to create an open source manufacturing carbon labeling program, could have a disproportionate impact on all e-commerce platforms and global consumption patterns.

Just as we saw with Microsoft making the first bold, public climate commitment, and other tech giants vying for climate leadership, can we also see a positive race with e-commerce firms publicly committing toward implementing carbon labeling for products sold on their platforms. The question is, which one will be the first?

Source: *Forbes*, 23 July 2020

Questions

(a) Explain the likely value of cross elasticity of demand between goods sold on e-commerce platforms and those sold in physical retail shops. [2]

(b) **(i)** Identify and explain the type of market structure that the global e-commerce industry is operating in. [2]

(ii) Using a diagram, explain how 'undercutting Amazon sellers' membership fees to attract vendors' by Alibaba (Extract 2) is likely to affect Amazon's profit in the European market. [4]

(c) Using a diagram, explain how 'urban last-mile delivery' could lead to market failure. [4]

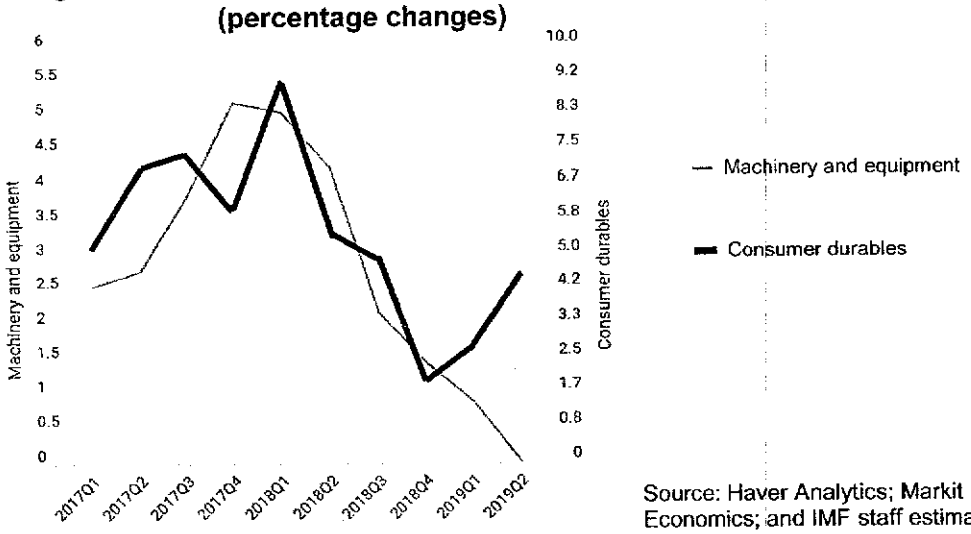
(d) Discuss whether the switch to carbon neutral deliveries by companies is better than the proposed policy of charging them a fee for urban deliveries in reducing carbon emissions in Paris. [8]

(e) With reference to the data, discuss whether the move to limit Amazon's growth by policymakers (Extract 3) is necessary. [10]

[Total: 30]

Question 2: The Global Economic Slowdown

Figure 1: Spending on machinery, equipment and consumer durables, 2017 – 2019 (percentage changes)



Source: Haver Analytics; Markit Economics; and IMF staff estimates

Extract 6: Nations must unite to halt global economic slowdown, says new IMF head

The new International Monetary Fund head said low inflation and weak growth meant it was right for central banks to keep interest rates low, but stressed that real interest rates were already near zero or negative in many advanced countries, leaving limited scope for further cuts.

"In some countries, firms are using low rates and building up debt to fund mergers and acquisitions instead of investing. Our new analysis shows that if a major downturn occurs, corporate debt at risk of default would rise to $19 trillion, or nearly 40% of the total debt in eight major economies. This is above the levels seen during the financial crisis. Low interest rates are also prompting investors to search for higher yields in emerging markets."

Source: *The Guardian*, 8 October 2019

Extract 7: New IMF chief calls for Germany to spend on infrastructure

In her first speech as head of the IMF, Kristalina Georgieva said Germany and other economies with balanced budgets need to spend more domestically. "Now is the time for countries with room in their budgets to deploy — or get ready to deploy — fiscal firepower," she said.

Georgieva called out by name Germany, the Netherlands, and South Korea as examples of countries where "an increase in spending — especially in infrastructure and R&D — will help boost demand and growth potential." The German government has in recent years pursued a balanced budget. It has also written into law a so-called "debt brake," requiring the federal as well state governments to limit their expenditures.

For countries that maintain high levels of debt-to-GDP, she encouraged them to continue to exercise fiscal restraint, but not at the expense of education, health, and jobs.

The call for spending came packaged in a speech highlighting the sorry state of the greater global economy and a need for a "synchronized" effort to revitalize economic growth. Global economic growth has fallen to its lowest rate in a decade and trade growth is at a near standstill. Weaker spending on machinery, equipment and consumer durable goods has been an important contributor to the global slowdown. Despite low unemployment rates, both the German and US economy are showing signs of trouble ahead. China, after years of rapid economic gains, is also experiencing a slowdown.

Source: *Deustche Welle*, 8 October 2019

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Extract 8: China's economic slowdown: How bad is it?

China's Premier Li Keqiang has said it would not be easy for the country to sustain growth rates of above 6%. "The slowdown in China is becoming quite significant," says Tommy Wu, senior Asia economist at Oxford Economics. "Both the weakening in the domestic economy and deteriorating external environment, including both a global slowdown, and the US-China trade tensions, have a role to play in China's slowdown."

The official data paints an increasingly cloudy outlook. Industrial output is growing at its weakest pace since 2002, and retail sales are slowing. Chinese exports fell in August by 1% from a year earlier, and by a sharp 16% to the US - a clear sign that the dispute with the US is hurting bilateral trade. China's economy grew 6.2% year-on-year in the second quarter, easing from 6.6% in 2018. "It's not as if Chinese growth has completely fallen off a cliff," says Frederic Neumann, co-head of Asian economics research at HSBC. "On the contrary, there are still many pockets of growth," he adds, pointing to housing construction and spending in the services sector.

China's government has sought to support the economy this year through tax cuts, and by taking measures to boost liquidity in the financial system. But Mr Neumann says that this time around, the government was being "fairly restrained" when providing credit to firms and individuals, and administering stimulus. That's because the government believes China needs to curb the risk in its financial system, and cool the rapid credit growth of recent years, he adds. Having relied heavily on infrastructure spending to stimulate the economy over the years, analysts say Beijing had limited room to do much more on that front. Instead they have opted for tax cuts, which tend to be less effective in boosting growth than infrastructure spending, says Mr Wu.

Mr Wu expected Beijing to do more to stimulate the economy going forward - both through fiscal and monetary policy - but worried this would not be enough. "We do expect more to come to help stabilise growth by next year. But the key downside risk is that the authorities do not step up policy support enough to stabilise growth."

The US and China have been fighting a trade war for more than a year, and more tariffs are expected. China has also sought to bypass the taxes by exporting to the US via other Asian countries. He says that China's share of global exports has actually grown over the past year, showing that the fall in Chinese exports has been less pronounced than those from other countries.

Western businesses are finding it increasingly hard to navigate the uncertainty. Some have been shifting production out of China, even though the numbers have not been large enough to show up in the economic data, says Mr Evans-Pritchard. "The longer these tariffs remain in place, the longer this drags on, the higher the chance we are going to see more firms shifting out of China, and it also makes the country a less attractive place to invest in the first place," he says. According to a 2019 survey by the American Chamber of Commerce in China, nearly a fourth of all respondents are delaying China investments.

Source: *BBC News, 26 September 2019*

Extract 9: The new decade: Why productivity growth won't save Europe

As a new decade dawns, expectations for growth in the eurozone are meagre at best. In the next 10 years, demographic and structural headwinds, and a limited appetite for reform, could push the bloc's potential growth rate to less than 1%, down from the annual average pace of 1.4% of the previous decade.

Europe is now confronted with a slowdown in labour force growth at a time when productivity growth has been dwindling, leading to a decline in potential economic growth. In the eurozone the growth of the working age population has been decelerating over the last decade and will fall by 3.8% in the next 10 years. Various studies have pointed to a positive relationship between a large group of "prime age workers" and productivity growth. As the share of prime age workers has been declining (for which we use a ratio of 30-49 to 50+), this has, in part, explained the declining productivity growth.

To compensate for the ageing effect, a very flexible labour and capital market is needed, constantly shifting resources to the most productive sectors or firms. Europe is definitely not there yet and more structural reform is likely needed. Moreover, in an ageing society the pattern of consumption tends to shift towards services, a sector where productivity growth is lower on average. This phenomenon might drag the average productivity growth of the whole economy down further.

Nonetheless, while economic growth in the eurozone will likely slow over the coming decade, some regional job markets are set to thrive. Brussels, Copenhagen, Helsinki, London and Vienna have something in common. Aside from being large, northern European metropolitan areas, they are also pockets of opportunity in an environment of slowing economic growth. With good digital infrastructure, moderately high spending on research and development and highly educated workforces, employment prospects in these cities are among the best in Europe over the coming decade, while strong high-tech industrial areas such as Stuttgart, Braunschweig, West Sweden and Brabant Wallon are also set to outperform.

This means rural areas that have fallen behind in terms of digital infrastructure and investment and those which also have older populations are set for weaker than average growth, while the more innovative regions with better digital infrastructure and younger, more educated populations are set to thrive. Interestingly, countries that have seen the weakest aggregate growth rates have also experienced the mildest divergence between regions.

Source: *ING Think*, 4 March 2020

Questions:

(a) With reference to Figure 1, explain how the falling trend in spending on machinery and equipment over the period 2017– 2019 could have contributed to the global slowdown. [2]

(b) With reference to Extract 6, explain how real interest rates could become negative. [2]

(c) Explain the external consequences to emerging economies arising from investors searching for higher yields (Extract 6). [4]

(d) Use the concept of opportunity cost to explain **one** effect on governments arising from spending on infrastructure and R&D. [2]

(e) Explain why countries with high levels of debt-to-GDP should 'exercise fiscal restraint'. [2]

(f) To what extent will the slowdown in potential economic growth limit the future standard of living of Europe? [8]

(g) Discuss whether you agree with the view that supply side policies are most appropriate to reverse China's economic slowdown. [10]

[Total: 30]

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C2 H2 Prelim CSQ1 Mark Scheme

(a)	**Explain the likely value of cross elasticity of demand between goods sold on e-commerce platforms and those sold in physical retail shops.** **[2]**	
	Explain sign XED > 0;+ve because substitutes + (price of one good & demand for the other change in same direction) [1m] **Explain magnitude** XED > 1 (high) strong substitutes + > proportionate change in demand when price of the other changes. [1m] OR XED < 1 (low) weak substitutes + < proportionate change in demand when price of the other changes. [1m]	
(b)	(i) **Identify and explain the type of market structure that the global e-commerce industry is operating in.** **[2]**	
	Identify market structure: The global e-commerce industry operates in an **oligopoly** market structure. **[1m]** **Explain** MCR4, 4-firm concentration ratio of 51% [1m] MCR3, 3-firm concentration ratio of 42% [1m] A few dominant firms + some attempt to explain why so using case evidence (i.e. no MCR used). [1m]	
	(ii) **Using a diagram, explain how 'undercutting Amazon sellers' membership fees to attract vendors' by Alibaba (Extract 2) is likely to affect Amazon's profit in the European market.** **[4]**	
	Explain why demand for Amazon ↓ [1m] Substitutes - Alibaba undercut, DD / AR for Amazon fall Explain why profit of Amazon ↓ [1m] P ↓ but AC ↑ , profit per unit ↓ AND Q ↓ , total profit ↓ from area ABCD to area EFGH [1m] OR P ↓ & AC ↓ (but ↓ in P > ↓ in AC) profit per unit ↓ AND Q ↓ total profit ↓ from area ABCD to area EFGH [1m] Diagrammatically Leftward shift of AR/MR. Vertical intercept must be lower. **[1m]** Drop in profit **[1m]** **Note:** - **no deduction if student shade profit area instead of label** - **If student use DD-SS, cap at one mark one mark for correct change in demand** - **Referring to profit area using (P-C)x(Q) is accepted also, but student needs to mention fall in price or quantity or revenue too to be awarded the full credit for this point.**	
(c)	**Using a diagram, explain how 'urban last-mile delivery' could lead to market failure.** **[4]**	
	Extract 4: Urban last-mile delivery leads to more emissions, pollution and congestion – negative externality of consumption/production **Explain/ Exemplify** external costs **[1m]**	

	Identify 3rd parties **[1m]** Explain how it leads to MF [1m] Free market quantity is Qm (as consumers & producers ignore such external costs) Socially efficient quantity is Qs Hence overconsumption/overproduction as Qm > Qs overallocation of resources (as from Qs to Qm, total costs to society exceeds total benefits) MF Diagram [1m] MSC > MPC + correct Qs & Qm If DWL area shaded wrong, no mark penalised due to only 1m for diagram.
(d)	**Discuss whether the switch to carbon neutral deliveries by companies is better than the proposed policy of charging them a fee for urban deliveries in reducing carbon emissions in Paris.** **[8]**
	1. Explain how a switch to carbon neutral deliveries reduces carbon emissions Extract 4: switch to carbon neutral deliveries by companies - use electric and natural gas vehicles and bikes for the final mile deliveries would reduce carbon emissions of urban last mile deliveries, reduce MEC at Qm Limitations/ Concerns: • Takes time and commitment – 'such progress still lags behind that of some more-proactive companies currently working in France...' , 'by 2024, La Poste promises that its deliveries within Greater Paris will be entirely carbon neutral...', 'Amazon aims for carbon neutral deliveries by 2030...' • Costly – 'global order of 100,000 of electric delivery vehicles is the largest yet made by any company...' **2. Explain how a policy of charging companies a fee for urban deliveries reduces carbon emissions** Extract 4: Fee for urban deliveries – tax to solve negative externality (c), if accurately measured to =MEC at Qm, ↑ MPC to coincide MSC at Qs, ↓ Qm to Qs, hence carbon emissions Limitations/ Concerns: • Tax may not be punitive enough - 'Paris' plans hardly pose an existential threat given Amazon's size'... • Tax is an unpopular move - 'if Amazon and other companies decide to pass this burden on to their customers—and it would be hard to prevent them from doing so—city leaders could be blamed for making shopping less affordable in what is already one of the worlds' costliest cities'.. **STAND** Both can reduce carbon emission just in different ways but **1** is likely to be better than **2** – it is a **more sustainable way in the LR** to encourage companies to seek and invest in alternative greener modes of deliveries rather than imposing a tax on them which would likely be passed on to consumers and cause **public dissent** since demand for last-mile delivery is expected to grow 78% with online stores, e-grocers and food delivery services competing to offer faster home deliveries (Extract 4), **MPB will rise** and Qm will rise with higher MEC 'urban last-mile delivery emissions are set to increase by more than 30% in 100 cities globally', only way forward is to lower MEC and close the gap between MSC & MPC to cater to the rising demand. Alternatively: Explain how the measures work with their respective merits, then examine which is better by considering their costs/ limitations

MARK SCHEME

L2: (4-6)	• Explains how a switch to carbon neutral deliveries can reduce carbon emission with limitations/ concerns • Explain how a fee for urban deliveries (tax) can reduce carbon emission with limitations/ concerns • Applies case evidence to support answers • Applies economic concepts or theories • Demonstrates sufficient depth and rigour in the analysis
L1: (1-3)	• Lacking in any of the L2 criteria
E (+2)	• Provide a substantiated stand on whether a fee for urban deliveries or carbon neutral deliveries is a better way to reduce carbon emission in Paris

(e) With reference to the data, discuss whether the move to limit Amazon's growth by policymakers (Extract 3) is necessary. [10]

INTRODUCTION

'move to limit Amazon's growth' stems from Extract 3. This move will **prevent Amazon from dominating the digital/ e-commerce industry and force it to scale back its business** in the respective countries (India and Europe).

THESIS: Yes, the move to limit Amazon's growth is necessary

Reduces allocative inefficiency

<Diagram of fall in AR/MR & rise in PED to reduce P>MC)

by protecting homegrown businesses and reducing threat to open competition

Regulators in Europe opened investigations into whether Amazon is a threat to open competition (Extract 3)

Evidence of Allocative Inefficiency

'charging sellers thousands of dollars to speak to account managers, as well as making it necessary to purchase ads to guarantee the top spot on a search page. As much as a third of every dollar merchants make goes back to Amazon, according to consultants and sellers. That helped Amazon generate $42.7 billion in revenue from seller services such as fees and commissions last year, a number that has nearly doubled in two years.'

ANTI-THESIS: No, it is not necessary to limit its growth

Needs to grow large to reap iEOS to achieve PE

(Extract 3) company invests billions of dollars in digital tools and physical infrastructure – reduce unit COP charge lower fees to sellers using their platform

Needs supernormal profits to engage in DE

'invests heavily in driving traffic to its site and improving its infrastructure, which benefits third-party sellers' (Extract 3)

With growth and higher profits earned, Amazon can contribute to the reduction of carbon emissions in the e-commerce industry parts c&d

With growth and higher profits earned – (Extract 5) they are able to spend on 'investment in consistent data collection. Using Machine Learning algorithms, calculating the carbon footprint from raw materials to a factory's manufacturing and packaging processes, to warehousing and eventually transportation to a customer doorstep is data intensive' , 'Amazon now pledging $2 billion toward a climate change fund', 'Using some of these funds to invest in the capabilities of the Amazon platform to create an open source manufacturing carbon labeling program, could have a disproportionate impact on all e-commerce platforms and global consumption patterns' (carbon labelling aims to solve imperfect info part (d))

and **lead other ecommerce firms to do the same** 'having a serious effort for product carbon labeling should be feasible, with the right leadership'

CONCLUSION

To justify MOVE IS NECESSARY:

The move helps to prevent exploitation of its customers and shoppers in the long term due to its dual role as a massive open marketplace and a giant competitor in that marketplace. The fact that 'many of the company's fees are for optional services, and it has recently lowered some' according to Extract 3 suggests that such **'regulatory scrutiny' helps to keep its anti-competitive behaviour in check.**

Growth and supernormal profits are necessary for investments in infrastructure, digital tools and even data collection to reduce carbon footprints which would be beneficial to all parties in the society in general. Given that Amazon is also a seller in its marketplace (a consumer too), it would be committed to invest in the former for its own benefits **but commitment to climate pledge remains to be seen** as **relevant progress still lags behind** that of some more-proactive companies currently working in France according to Extract 4, suggesting that it might take some time for this to materialise and improve social welfare.

To justify MOVE IS <u>NOT</u> NECESSARY:

According to Extract 3, 'many of the company's fees are for optional services, and it has recently lowered some' suggests that there may be **no evidence of allocative inefficiency or exploitation of consumers.**

Growth and supernormal profits are necessary for investments in infrastructure, digital tools and even data collection to reduce carbon footprints which would be beneficial to all parties in the society in general. **Given that Amazon is also a seller in its marketplace (a consumer too), it would be committed to invest in the former for its own benefits.** Amazon is operating in an oligopolistic market structure with strong global competitors e.g. Alibaba. Theory of **contestable market** e.g. in the European market (Extract 2) **would ensure that it stays competitive** to defend its monopoly position to retain supernormal profits (b)(ii).

Even though commitment to climate pledge remains to be seen with slow progress (Extract 5), in a climate where the environmental and economic effects of e-commerce are coming under increasing scrutiny from both legislators and the public, Amazon could possibly **face pressure** to speed up in this aspect or even **vie for climate leadership** like the Tech giants as suggested by the extract.

MARK SCHEME

L2: (5-7)	• Explain why it is necessary to limit growth of Amazon (to reduce allocative inefficiency) • Explain why it is not necessary to limit growth of Amazon • Analyses with depth and rigour • Supports answers with case evidence • Applies economic concept and theories
L1: (1-4)	• Lacking in any one of the L2 criteria
E: (+3)	• Provide clear judgment and justification on whether the move to limit growth of Amazon is necessary

HCI Prelim 2021 Case Study 2 Suggested Answers

(a) With reference to Figure 1, explain how the falling trend in spending on machinery and equipment over the period 2017–2019 could have contributed to the global slowdown. [2]

- Figure 1 shows a falling trend in spending on capital goods. This would result in a limited increase in Investments (I) since I captures firms' spending on capital goods. [1]

- I, and thus AD, would increase at a slower rate. This will results in slower actual growth.[1]
  Or
- A fall in the rate of increase in AD would imply that the demand for imports, and hence exports from a trading partner, would increase at a slower rate as well, thus resulting in lower actual growth. [1]

(b) With reference to Extract 6, explain how real interest rates could turn negative. [2]

- Real interest rates is given by the difference between nominal interest rates and inflation rate. [1]
- Since inflation is positive and low (i.e. 'low inflation' in Extract 6), it could mean that nominal interest rate is possibly close to zero or below the given inflation rate [1].

(c) Explain the external consequences to emerging economies arising from investors searching for higher yields (Extract 6). [4]

- Lower interest rate in some countries will prompt investors to seek for higher returns in emerging economies (Extract 6) and this will result in short term capital inflow into these countries. [1]
- This raises the demand for the local currency which creates an upward pressure on the exchange rate resulting in currency appreciation. [1]
- Currency appreciation may result in a decrease in export price competitiveness and/or make imports cheaper [1].
- Assuming PEDx>1, export revenue falls and assuming PEDm>1, import expenditure increases. BOT worsens.[1]

2m for consequences on exchange rate and 2m for consequences on BOT

(d) Use the concept of opportunity cost to explain <u>one</u> effect on governments arising from spending on infrastructure and R&D. [2]

- In Extract 7, when governments spend on infrastructure, given a limited budget, the opportunity cost would be having to forego spending [1] on education* which is the next best alternative. [1]

** Students can also provide other examples such as healthcare stated in Extract 7.*

(e) Explain why countries with high levels of debt-to-GDP should 'exercise fiscal restraint'. [2]

High levels of debt-to GDP means that the government has financed their spending by borrowing.

- Government could decide to repay its debt by raising revenue in the form of higher (personal and corporate) income taxes in the future. [1]
- This will dissuade both domestic and foreign investment, and reduce the desire to work, hence could be a contractionary impact on the economy and potential growth will be limited. [1]

OR

- This could result in the crowding out effect where government borrowing reduces the funds available for consumers and firms to borrow. [1]
- This reduces consumption and investment which can offset any expansion in AD due to increase in government spending, especially in the midst of the global slowdown [1]

(f) To what extent will the slowdown in potential economic growth limit future standard of living of Europe? [8]

Slowdown in economic growth in Europe limits future SOL

1. Source of slowdown in labour force growth: Declining growth of working age population that results in a decline in productivity growth.

   - Labour productivity refers to real output per worker. Therefore decline in productivity growth will reduce COP at a slower rate since relatively more input is required to produce the same output. SRAS increase at a slower rate, generating limited short term growth

   OR

   - Declining growth of working age population will slow down the fall in wages due to limited supply of labour 'share of prime age workers are declining' and hence COP falls less and SRAS rises slowly.

   - At the same time, productive capacity increase is limited / slower, LRAS increase is limited, potential growth is limited. Hence future increase in actual growth is limited and Material SOL.

2. Greater focus on consumption of services:
   - This could reinforce the slowdown in the increase in SRAS since services is 'a sector where productivity growth is lower on average'
   - Perhaps this might shift resources towards providing services and away from capital goods resulting in less resources available for consumption in the future, reducing future material SOL.

3. Europe does not have a flexible labour and capital market to shift resources to the most productive sectors to compensate for the aging effect. Labour may not be sufficiently skilled to match job requirements in the most productive sectors resulting in structural unemployment, accounting for the limited increase in LRAS, hence limited actual growth and hence material SOL in the future.

However, mitigating factors cushion the extent future SOL limits in Europe

- 'Good digital infrastructure, moderately high spending on R&D' contribute to an increase in quality and quantity of capital.
- 'Highly educated workforce' contributes to higher quality of labour.
- Together, these factors result in an increase in LRAS and hence productive capacity.
- Hence this helps support actual growth in the future due to either increased labour productivity in these regions or ability to attract investments thus increasing AD in the future, which would in turn generate growth and hence higher incomes and consumption of goods and services in the future. Material SOL improves
- Evidence: 'employments are the best in these regions'

In fact, European countries with aging populations face mild disparity in growth rates between regions, smaller income gap, hence reduce extent of fall in future material SOL

Rural vs metropolitan high-tech industrial areas:

- When the growth rates is highly disparate between the different regions, it could result in widening income inequality gap between people living in these regions.
- Rural areas experience weak growth and hence falling incomes and material SOL while the people living in the more prosperous regions are able to find employment easily and enjoy higher growth rates, resulting in higher incomes and hence greater consumption of goods and services – material SOL improves.
- This disparity can worsen material SOL however for countries with aging populations, this is not so much a problem hence the income gap may not be so wide. Hence they might be better off in terms of future material SOL relative to countries which have a smaller aging population and a larger share or prime age workers.

Conclusion:

- The lower labour productivity due to Europe's aging population is highly likely to limit future material SOL, especially for countries with a higher proportion of elderly relative to prime age workers.
- The ability of the governments to put in place structural reforms (Extract 9) and continue high spending in areas such as R&D (e.g. Germany in Extract 1) & educating the workforce will help reduce the limited impact on future standard of living.

Or

- The lack of infrastructure and a less educated workforce is likely to contribute to future SOL being limited.

L2	• Analyses how the slowdown in growth might cause the future SOL in Europe to be limited • Analyses reasons why long term SOL might improve • Applies case evidence to support answers • Applies economic concepts and theories • Demonstrates sufficient depth and rigour in the analysis	4 – 6
L1	• Lacking in any of the L2 criterions	1 – 3
E	• Evaluates arguments and makes overall judgment impact on long term SOL	1 – 2

(g) Discuss whether you agree with the view that supply side policies are the most appropriate policies to reverse China's economic slowdown. [10]

Introduction

Supply-side policies are policies designed to influence the production costs, productive capacity, factor mobility and efficiency of an economy. Whether they are the most appropriate policies will depend on several factors, including the causes of the economic slowdown and the characteristics of China's economy. Furthermore, SSPs need to be analysed in comparison to demand-side policies in order to evaluate which policies are the most appropriate in this context.

Thesis: SSPs may be more appropriate to reverse China's economic slowdown

- If the primary aim of the SSP is to influence production costs –> SRAS shifts; if the primary aim is to influence productive capacity –> LRAS shifts. Also includes policies to facilitate factor mobility, reduce structural unemployment and changes to legislation to improve the efficiency of resource allocation
- Since China's exports to the US have fallen by 16% due to the US-China trade tensions (Extract 8), China's government could help Chinese firms reduce their cost of production. These measures could include subsidies for wages as wages are usually a significant proportion of firms' costs. With lower costs, SRAS would shift right and the general price level would decrease. Hence, China's exports would be more price competitive in terms of foreign currency (e.g. USD), which would improve China's NX with the US.
-
- Public investment in infrastructure as well as support for R&D boosts the quantity and quality of capital respectively
    - G component increases -> AD shifts right via multiplier effect -> actual growth and a fall in DD-deficient unemployment
    - R&D increases the productivity of firms -> reduces production costs -> SRAS shifts right -> actual growth and a fall in DD-deficient unemployment
    - R&D also increases the quality of capital -> LRAS shifts right -> increase in China's productive capacity -> this creates a wider output gap and greater economic slack in the economy, which provides the economy room for non-inflationary economic growth

Limitations:

- Even as the government works to boost productivity in firms, firms are shifting production out of the country amidst economic uncertainty **(Ext 8)**, reducing their reliance on the Chinese market as their primary sourcing market for manufacturing supplies in the global supply chain. This may have a mitigating effect on the government's drive to boost productivity as firms may bring with them their technology and expertise when they shift production out.

Anti-thesis: Demand-side policies may be more appropriate to reverse China's economic slowdown

- Expansionary monetary policy -> China's central bank lowers the interest rate -> lowers cost of credit -> C & I increase; increase in outflow of hot money -> increased SS & reduced DD of RMB -> RMB depreciates -> increased DD for X & decreased DD for M -> (X-M) increases -> AD increases via multiplier effect due to increases in C, I & X
- Expansionary Fiscal Policy -> increase in G and/or decrease in T –> decrease in direct taxes increases disposable income for both households and firms -> C & I increase -> AD increase via multiplier effect due to increases in G, C and I
- According to **Figure 1**, weaker spending on machinery, equipment and consumer durable goods was an important contributor to the global slowdown. Hence, government investment in capital goods as well as lower borrowing costs would help to mitigate, and even reverse, this slowdown in spending.

Limitations:

- However, with interest rates near or at zero in several advanced economies **(Ext 8 Para 1)**, China's central bank may not have much room to cut nominal rates further to boost growth. Exacerbating the problem is that many firms are at risk of corporate debt default if a major downturn occurs **(Ext 8 Para 2)**. This was due to access to easy credit which incentivised China's firms to take on more debt. A default would have significant ramifications on China's economy, in particular the impact on FDI if investor confidence takes a hit. Hence, the Chinese government is moving to curb the risk in its financial system and slow the rapid build-up of debt in recent years **(Ext 8 Para 3)**. This would imply that the central bank would be reluctant to lower rates, even if it could.

Evaluative comment: if firms default on their debt, it would come at a very bad juncture for China's economy as it tries to attract FDIs, in part to stem the tide of firms shifting production out of the country. This apparent weakness in the economy would cause firms to think twice about investing in infrastructure and production in China.

- In a severe downturn, especially when there is weakness in consumption and investment due to poor economic outlook and pessimism, government spending is required to kick-start the multiplier effect, in turn boosting C and I. However, the government opted for lowering taxes instead, which is less effective in boosting growth **(Ext 8 Para 3)**. With higher disposable incomes, household and firms may still opt to hold their money instead of spending due to the economic uncertainty.

Evaluative conclusion:

SSP in terms of reducing production cost, improving factor mobility and investing in infrastructure is more appropriate to boost export competitiveness to help with the sharp 16% fall in exports and enhance its attractiveness as a viable choice for investment to counter the bleak investment outlook due to the ongoing trade war with the US.

While demand management policies may help in the short run to address the weak domestic economy, there is less need for such policies since there is evidence that the housing construction sector and spending on services show promise of boosting the economy (Extract 8) via an increase in C & I. Moreover, Extract 8 does throw caution to the use of expansionary fiscal policy via government spending on infrastructure to stimulate the economy as it notes that the government has limited room to use this tool and that the alternative of tax cuts will be less effective.

Admittedly SSP will take some time to see results. However, China has had 'years of rapid economic gains' (Extract 7) which it could use to help the economy in the shorter term while waiting for SSP to take effect.

Suggested marking scheme:

L2	• Analyses how supply-side policies might be more appropriate to reverse the slowdown in growth in China – analyses both SR and LR growth • Analyses alternative policies to reverse the slowdown in growth in China • Analyses the limitations of the policies • Applies case evidence to support answers • Applies economic concepts and theories • Demonstrates sufficient depth and rigour in the analysis	5 – 7
L1	• Lacking analysis in either SR or LR growth • Does not analyse alternative policies and/or limitations of both SSP and alternative policies • Analytical rigour and a clear framework (e.g. AD/AS) lacking • Insufficient case evidence to support arguments	1 – 4
E2	• Evaluates arguments and makes overall judgment on appropriateness of supply-side policies on reversing China's slowdown in growth	2 – 3
E1	• Makes a stand on the appropriateness of supply-side policies with no or minimal substantiation/justification	1

HWA CHONG INSTITUTION
JC2 Preliminary Examinations
Higher 2

CANDIDATE NAME		**CT GROUP**	20
CENTRE NUMBER		**INDEX NUMBER**	

ECONOMICS
Paper 2 ESSAY

9757/02
13 September 2021
2 hours 15 minutes

Additional Materials: Answer Booklet(s)

READ THESE INSTRUCTIONS FIRST

Write your **name, CT group, Centre and Index numbers** clearly on every sheet of answer paper that you hand in.

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

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

Start each question on a new page in the answer booklet.

Indicate the questions you attempted on the cover page of the 12-page booklet.

Do not tear out any part of this 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 are advised to spend several minutes reading through the questions before you begin writing your answers.

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

Answer **three** questions in total.

Section A

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

1 Electricity generation companies had built excess capacity to cater to projected bullish demand a decade ago which did not materialise, and the overcapacity led to electricity prices falling. However, future electricity prices are likely to increase due the growth of data centres and electrification of vehicles. But the government will take steps to moderate the rise in electricity prices.

Source: *The Straits Times*, March 2020

(a) Explain how overcapacity had led to falling electricity prices a decade ago and why future prices are expected to rise. [10]

(b) Discuss the measures that the Singapore government could use to moderate the rise in electricity prices. [15]

2 Mask wearing aid in reducing viral transmission. A Facebook post that lists dangers of wearing face masks contains false and misleading information. The surge in demand for face masks resulted in a spike in the prices of face masks causing some governments to impose price controls on face masks.

(a) Explain why governments intervene in the market for face masks. [10]

(b) In light of the trade-off between efficiency and equity, discuss if imposing price controls or allowing market forces to respond to the higher demand would result in the more desirable allocation of face masks. [15]

3 Representatives from the food and beverage (F&B) industry have called on the Singapore government to provide more help, saying businesses have been hard hit by the Covid-19 restrictions such as the ban on dine-in customers. Border closures has also thwarted firms from recruiting foreign employees. Meanwhile many F&B firms have turned to digital platforms for online orders.

(a) Explain how the Covid-19 restrictions have adversely affected the profits of an F&B firm. [10]

(b) Discuss whether smaller F&B firms like hawker stalls or larger F&B firms like restaurants are more likely to survive the pandemic. [15]

Section B

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

4 The Singapore dollar weakened to a four-month low after the central bank said there's "sufficient room" for the currency to ease if the economy weakens due to the impact of the coronavirus.

Source: *The Star*, February 2020

(a) Using the circular flow of income model, explain the effects on national income when a country's exchange rate depreciates. [10]

(b) Discuss the extent to which the depreciation of the Singapore dollar in 2020 would conflict with its various government macroeconomic objectives. [15]

5 **(a)** Explain the internal and external factors that are likely to cause a balance of trade deficit. [10]

(b) Discuss whether a country should be concerned about an increasing balance of trade deficit. [15]

6 Singapore recession forecast for 2020 worsens to between – 4% and –7%.

Source: *The Business Times*, May 2020

(a) Using AD-AS analysis, explain the key determinants of actual and potential growth. [10]

(b) Discuss whether the size and openness of Singapore's economy would influence its choice of macroeconomic policies to counter the recession. [15]

PRELIMS EQ1

Electricity generation companies had built excess capacity to cater to projected bullish demand a decade ago which did not materialize, and the overcapacity had led to electricity prices falling. However, future electricity prices are likely to increase due to the growth of data centres and electrication of vehicles. Nevertheless, government will take steps to moderate the rise in electricity prices.

Source: The Straits Times, Mar 2020

(a) Explain how overcapacity has led to falling electricity prices a decade ago and why future prices are expected to rise. [10]

(b) Discuss the measures that the Singapore government could use to moderate the rise in electricity prices. [15]

INTRO

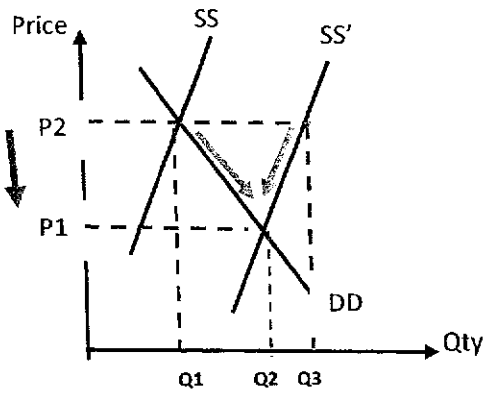
Demand refers to the quantities of a good or service that consumers are willing and able to buy at various prices over a given period of time, ceteris paribus. Supply refers to the various quantities of a good or service producers are willing and able to offer for sale at various prices over a period of time, ceteris paribus. The market equilibrium price and quantity for electricity is the price and quantity exchanged where the demand curve meets supply curve i.e. the quantity demanded equals the quantity supplied. Any further shift in Dd or SS curve will result in either a surplus or shortage at the original price which will cause the price to fall or rise respectively until a new equilibrium price is reached.

Body:

The fall in electricity prices due to excess SS

SS curve shifts right due to producers' expectations but DD curve remain unchanged causing surplus (overcapacity) as seen in the diagram Q3-Q1.

SS Factor: producers' expectations

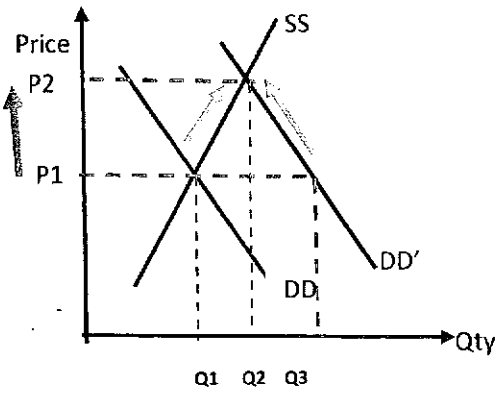


The increase in SS curve from SS to SS' result in excess qty SS of Q3 – Q1 at the original price of P2. This exert a downward pressure on price until a new equilibrium price is reached at P1 where Qty DD = Qty SS & the excess is eliminated

Fig 1: Increased SS resulting in downward pressure on price

Future prices are expected to rise due to the likely increase in DD caused by growth of data centres and electrication of vehicles.

DD factor: Growth of related goods or services that require the use of electricity: Increase derived dd for electricity to power data centres & electric vehicles



The increase in DD curve from DD to DD' result in excess qty DD of Q3 – Q1 at the original price of P1. This exert an upward pressure on price until a new equilibrium price is reached at P2 where Qty DD = Qty SS & the excess is eliminated

Fig 2: Increased DD resulting in upward pressure on price

Conclusion

DD and SS analysis shows that overcapacity has led to falling electricity prices a decade ago when there was excess qty ss at the original price. On the other hand, future prices of electricity are expected to rise as shortages occur when derived demand for electricity increase due to growth of data centres and electrication of vehicles.

Level	Descriptors	Marks
L3	• Breadth & Application o Analyses with the expected theoretical scope o Analyses entire scope as suggested by the question or/& preamble • Explains at least 3 distinct points of analysis, 1) Price mechanism aka price adjustment process (compulsory for explaining overcapacity leading to price fall) 2) falling electricity prices a decade ago 3) why future prices are expected to rise. • Depth o Applies relevant economic concepts or theories o Explains with rigour and detail o Explains and illustrates with relevant *diagrams* and examples – Price Mechanism diagram showing disequilibrium	8-10
L2	• Lacking in any one of the L3 criterions	5-7
L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4

(b) Discuss the measures that the Singapore government could use to moderate the rise in electricity prices. [15]

The Singapore government could moderate the rise in electricity prices via the price mechanism ie by either increase the SS or reduce the rate of increase in DD for electricity.

Reduction in the rate of increase in DD can be done via education or campaign ie moral suasion to conserve & use less electricity.

Evaluative Comment: Mindset & habit change may take time.

Increase supply.

Economic development and the move to restructure the economy to a smart city, would result in greater connectivity between key urban stakeholders and infrastructure via four pillars of city transformation: technology, data and analytics, cybersecurity, and connected citizens. The increasing consumption of electricity to power the growth of data centres, in conjunction with the Smart City initiatives, is inevitable. In order to meet its increasing DD, one way to moderate the rise in electricity prices is to increase supply.

In order to harness solar energy, Singapore (via ENERGY firm Sunseap Group) has developed one of the world's largest offshore floating solar panel systems, located along the Straits of Johor north of Woodlands Waterfront Park - a site which the government's Pro-Enterprise Panel (PEP) helped to identify. Supported by the Singapore Economic Development Board (EDB), the five megawatt-peak system generates about 6,388 megawatt-hours of renewable energy annually. This is equivalent to powering about 1,250 four-room flats, with a reduction in greenhouse gas emissions of about 2,600 tonnes every year. The five-hectare pilot in Woodlands was commercially operational early 2019

ENERGY firm Sunseap Group will build the world's largest floating solar farm and power storage system on the Indonesian island of Batam. The energy storage system will have a capacity exceeding 4,000 megawatt-hours. The floating solar farm is projected to have a capacity of 2.2 global warming potential (GWp) and will span around 1,600 hectares, making it the largest in the world. The US$2 billion (S$2.73 billion) complex will be on the Duriangkang Reservoir in southern Batam island, near Singapore, with construction slated to begin next year and be completed in 2024

Alternative measures would be:

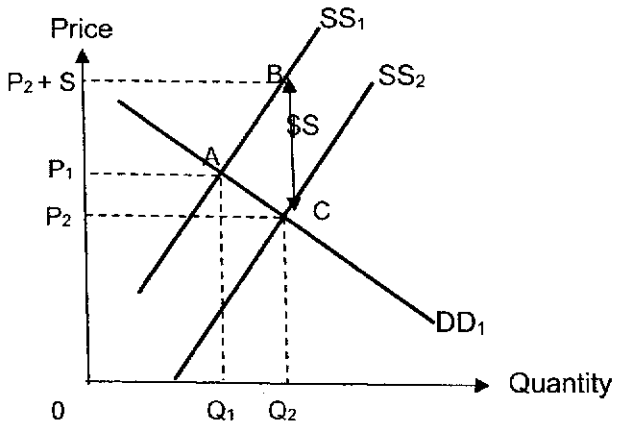
Subsidizing Electricity : Effects of Subsidies on Supply

The idea of providing a subsidy to producers is to artificially bring costs down.

A per unit subsidy is a fixed amount of money given to the producers for each unit they sell.

The economic impact of subsidies on production costs is that it lowers the cost of producing a good and thus shifts the supply curve downwards (or rightwards) by the amount of the subsidy.

Figure 3: Effect of a subsidy on supply curve



With reference to Figure 3,

- a per unit subsidy of $S shifts the supply downwards from SS_1 to SS_2
- quantity increases to Q_2 while equilibrium price decreases to P_2

- gain in consumer surplus is P_1ACP_2
- gain in producer surplus is $(P_2+S)BAP_1$
- the total amount of subsidy the government has to pay is $(S)*Q_2$

Consequences of a Subsidy

- Producers' income is raised from (P1 X Q1) to [P2+S] X Q2
- Consumers pay a lower price and quantity exchanged is higher. In this context, subsidies are provided to cushion the impact of rising cost of electricity to help buffer the adverse impact of rising cost of living on consumers.
- To the extent that tax revenues are used to finance the subsidy, there will be a transfer of income from taxpayers to the producers.

Moreover, most tax-payers are also consumers & would benefit from such subsidies. However, the effect would cause a redistribution of income which may benefit the lower income group which may pay less income tax in a progressive tax structure.

Drawbacks: In the absence of market failure, subsidies may end up distorting the efficient allocation of resources. Indeed, it is often argued that it encourages wasteful consumption (i.e. excessive or over-consumption) leading to resources not being allocated optimally. Electricity subsidies may encourage the inefficient use of energy. Consumers "fooled" by the artificially lower costs might resort to excessive consumption without weighing the full or real cost of production to society. There is no incentive to cut down wasteful consumption; adopt more efficient forms of energy e.g. green energy. In the long run, an economy's competitiveness and growth may be stifled.

Reduce electricity Tariff or slow down its rate of increase

SP Group reviews the electricity tariffs every quarter based on guidelines set by the electricity industry regulator, Energy Market Authority (EMA). SP Group can reduce the tariff rate to moderate the rise in electricity prices.

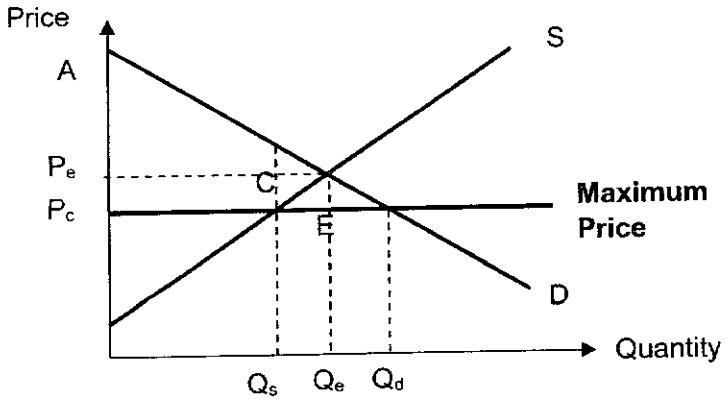
In March 2021, EMA has also sought proposals for trial to import electricity from Malaysia. THE Energy Market Authority (EMA) is seeking proposals to appoint an importer for a two-year trial to import electricity from Malaysia. Under the request for proposal, up to 100 megawatts of electricity will be imported for sale in Singapore via an existing undersea cable between Singapore and Malaysia. This translates to around 1.5 per cent of Singapore's peak electricity demand in 2020, which can power around 144,000 four-room HDB flats for a year.

Evaluative Comment: The price of electricity has to be carefully negotiated for long term benefit of both countries.

EMA can also set price control on electricity market, with the following objective (intended consequences) in mind:

- To keep the price of electricity at a level that is affordable to the majority.

Figure 4: Price Ceiling on the market for electricity



Drawback: Referring to Figure 4, the equilibrium price is at P_e and Q_e.

- After the government imposes a price ceiling P_c, a shortage of $Q_d - Q_s$ arises

Note: Acceptable if example of price control is given as MC pricing or AR pricing imposed on Electricity Generation Firm. Evaluative Comment: MC pricing may not be viable as it may result in economic loses, unless Govt subsidies are given.

Conclusion:

In view of the shortcoming of the alternative measures such as maximum price which distort the working of the price mechanism & subsidies which drain government budget resulting in wasteful consumption, the best & long term measure to meet Singapore's growing need for electricity energy should be to increase its SS via the use of technology or to import from Malaysia. It is already in Singapore's long term goal to moderate the rise in electricity prices by increasing the SS of clean energy which has the added benefit of achieving its Green GDP objective. This would be supplemented by reducing the rate of increase in DD through campaign/moral suasion & education to reduce wasteful consumption of electricity.

Level	Descriptors	Marks
L3	• Breadth & Application o Covers 2-distinct arguments –strategies to moderate the rise in electricity prices by increasing SS as a sustainable measure and one other measure (eg reduce DD, price control) o Analyses with the expected theoretical scope (e.g. price mechanism, demand and supply analysis) o Analyses entire scope as suggested by the question or/& preamble o Explains at least 3 distinct points of analysis Depth o Applies relevant economic concepts or theories o Explains with rigour and detail o Explains and illustrates with relevant *diagrams* and examples – Demand and Supply diagram with shift	8-10
L2	• Lacking in any one of the L3 criterions	5-7
L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4
	Evaluation	
E3	• Takes a clear overall stand that is comprehensively justified by providing convincing evaluative comments on the measures in moderating the rise in electricity prices	4-5
E2	• Takes a clear overall stand which is only partially justified as o Only some of the points mentioned in the body were evaluated o The overall stand was largely justified by the inclusion of additional concluding points to sway the overall argument o The arguments used to evaluate individuals points were unconvincing or somewhat flawed Evaluates at least one of the points covered in the body but the overall stand is unclear Provides insightful opinion(s) which are however not directly relevant to the requirements of the question	
E1	• Provides unsubstantiated opinion(s)	+1

2	Mask wearing aid in reducing viral transmission. A Facebook post that lists dangers of wearing face masks contains false and misleading information. The surge in demand for face masks resulted in a spike in the prices of face masks causing some governments to impose price controls on face masks.		
	(a)	Explain why governments intervene in the market for face masks.	[10]
	(b)	In light of the trade-off between efficiency and equity, discuss if imposing price controls or allowing market forces to respond to the higher demand would result in the more desirable allocation of face masks.	[15]

Part (a)

Introduction

- Governments can intervene in the market for face masks for efficiency or equity reasons.

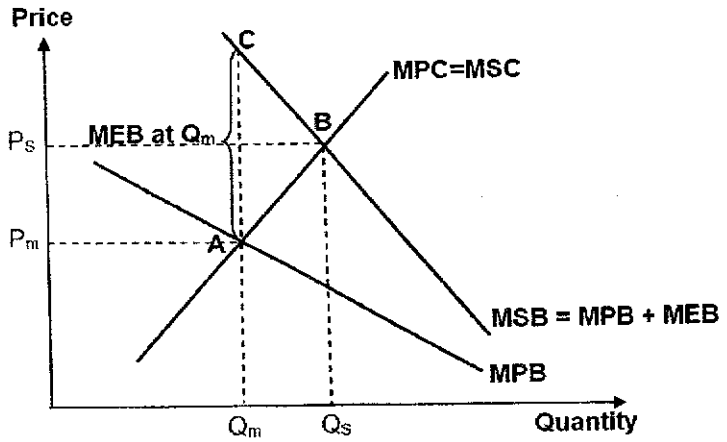
OR

- Governments can intervene in the market for face masks due to market failure arising from positive externalities and imperfect information.

Body

Positive externalities

Figure 1



- Face mask consumption generates external benefits to third parties such as those who do not wear face masks as lowering their risks of contracting contagious diseases. As less people fall sick, other third parties like employers can also benefit from their workers being more productive and incur less medical subsidies for their staff.

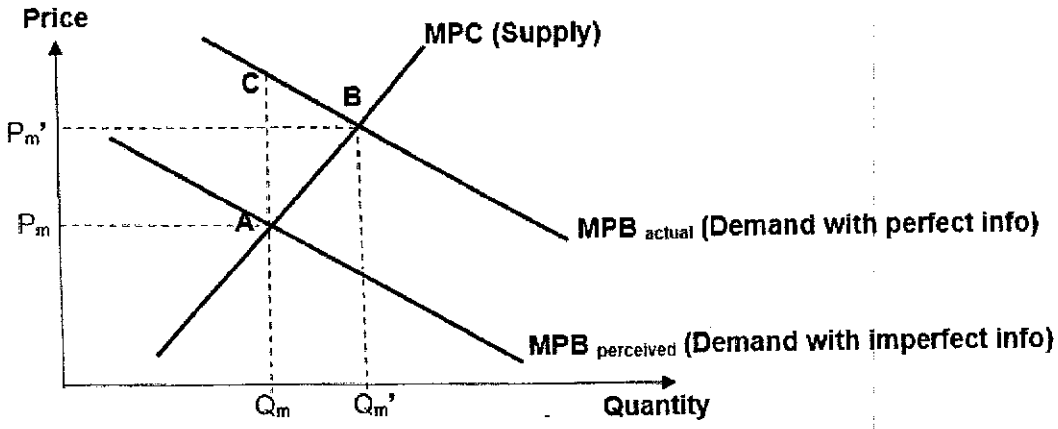
- These third parties do not compensate mask consumers for the external benefits that they enjoy. Hence such external benefits are unpriced by the market and not reflected in the marginal private benefit (MPB).

- As shown in Figure 1, these external benefits cause a divergence between private and social benefits, with MSB lying above MPB as MSB = MPB + MEB.

- The socially efficient quantity of face masks is at Q_S where MSB = MSC, where the full costs and benefits to society are considered. However, the free market will only consider its private costs and benefits and hence the market equilibrium quantity will only be at Q_m where MPB = MPC.

- For the under-consumption of $Q_S - Q_m$ units of masks, the MSB exceeds the MSC, resulting in a welfare loss of area ABC, prompting government intervention to correct this market failure.

Figure 2

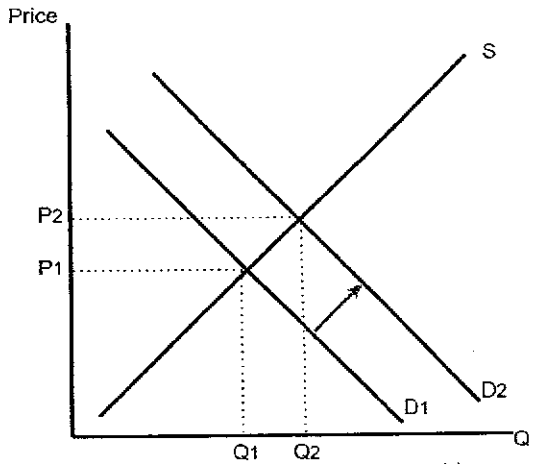


Imperfect Info

- The market can also fail due to imperfect information.
- Social media like Facebook posts can contain false information about the benefits of face masks such as that masks are not helpful in protecting one against viruses. This results in the perceived benefits of masks to be below their actual benefit as seen in Figure 2.
- (Students can also explain from a misperceived costs perspective.)
- With imperfect information, Q_m represents the free-market equilibrium output where MPC = MPB perceived.
- With perfect information, consumer demand is higher and Q_m' represents the free-market equilibrium output where MPC = MPB actual.
- Hence for the underconsumption of quantity Q_m' – Q_m, the MPB_{actual} exceeds the MPC, resulting in a welfare loss of area ABC, prompting government intervention to correct this market failure.
- Since at the individual level smokers do not make optimal consumption choices due to imperfect information and suffer from welfare loss, at the collective level, there is also failure in the market as the demand for masks will be lower under imperfect information than under perfect information, leading to overconsumption and welfare loss in the market as well.

Inequity

Figure 3



- Due to the Covid-19 pandemic worldwide, there has been a spike in the number of consumers of face masks. Since the total market demand is the horizontal sum of individual demand, this increases the total market demand from D1 to D2 shown in Figure 3 and increases the price of face masks from P1 to P2.

- The price mechanism allocates face mask to those who are willing and able to pay for them. However, face masks are likely deemed as a basic necessity during this pandemic. The spike in the price of facemasks due to the large increase in global demand can make this basic good out of reach of the lower income households. It can also lead to the hoarding of face masks by the financially more able people and may even result in lower income people who may need the masks the most being denied having this basic need. Hence societies and governments may deem the way the free market allocate the scarce face masks to be inequitable and hence intervene to ensure a more equitable distribution of face mask.

Conclusion:

In conclusion, governments may intervene in the market for face masks due to reasons such as positive externalities, imperfect information and inequity.

Level	Descriptors	Marks
L3	• Breadth o Covers at least 2 reasons for government intervention • Depth o Applies relevant economic concepts or theories o Explains with rigour and detail o Explains and illustrates with relevant *diagram* and examples	8-10
L2	• Lacking in any one of the L3 criterions • Only 1 reason for government intervention well explained OR 2 reasons for government intervention briefly explained & lacking in tools of analysis.	5-7
L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4

	(b)	In light of the trade-off between efficiency and equity, discuss if price controls or allowing market forces to respond to the higher demand would result in the more desirable allocation of face masks.	[15]

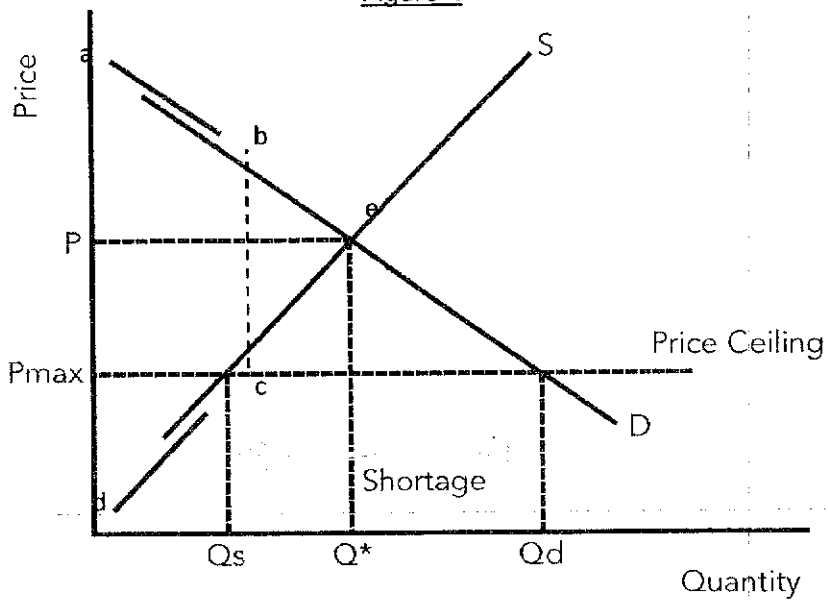
Introduction

- To achieve greater equity, the government can intervene by imposing price controls in the market for face masks to ensure they are affordable, but this can result in a trade-off between equity and efficiency.

Body

Explain how price controls (price ceiling) work to achieve greater equity

Figure 4



- Price ceiling reduces the price from P to Pmax.
- This makes masks more affordable and improves equity in the allocation of face masks.

Limitations of price controls (price ceiling) in achieving greater equity

- However, the lower prices cause quantity demanded to rise from Q* to Qd while quantity supplied falls from Q* to Qs, resulting in a shortage of Qd – Qs.
- The reduction in availability of face masks as quantity supply falls means that the face masks are affordable only to those who are fortunate enough to get their hands on them at the controlled price.
- This shortage can result in the formation of black markets where the black-market price can be even higher than the original market equilibrium price P.
- Hence the reduced availability of face masks or the problem of black markets can still result in low-income households having no access to the face masks, limiting the effectiveness of the price ceiling in achieving an equitable distribution of face masks.

Trade-off with efficiency

- Moreover, price controls distort the workings of the price mechanism and results in allocative inefficiency.
- At the original market equilibrium, consumer surplus is of area aeP while producer surplus is of area Ped.
- With the price control, consumer surplus changes to area abcP_{max} while producer surplus becomes area P_{max}cd.

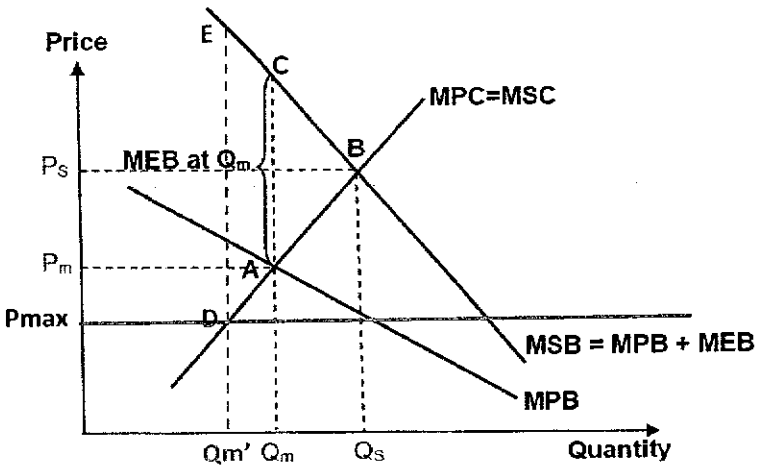
- The price ceiling introduces a welfare loss of area bec, which is the area by which the total social/economic welfare (i.e. the sum of the consumer and producer surplus) has fallen by.
-
- Hence even if price controls can achieve a more equitable outcome, the tradeoff is that there is greater allocative inefficiency due to the welfare loss that it causes.

OR

- Moreover, price controls distort the workings of the price mechanism and results in allocative inefficiency.
- The price consumers are willing to pay reflects the marginal benefit society places on the last unit of face mask available with the price ceiling in place. At quantity Qs, this is given by point b on the demand curve.
- The price producers are willing to accept reflects the marginal cost society incurs from the production of the last unit of face mask with the price ceiling in place. At quantity Qs, this is given by point c on the supply curve.
- Since point b is higher than point c, it is clear the marginal benefit exceeds the marginal cost of producing the last unit of face masks, resulting in allocative inefficiency as total social welfare could be increased by producing more face masks till quantity Q* where the marginal benefit equals the marginal cost at point e.

OR

Figure 5



- With the price ceiling, the market equilibrium quantity will fall further from Q_m to Q_m'. This worsens the issue of underconsumption of face masks from Qs – Q_m to Qs – Q_m'.

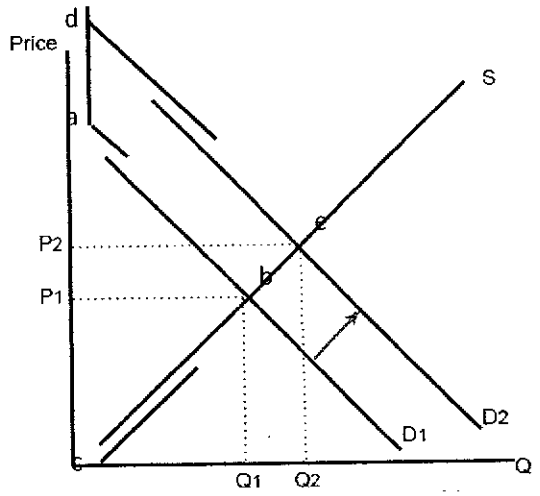
- Between Qm' and Qs, the MSB of each additional unit of face masks exceeds its MSC, increasing the deadweight loss from area ABC to area DBE.

- Hence the price ceiling can worsen the market failure and result in greater allocative inefficiency.

(An equally acceptable approach can be made if student use the imperfect info diagram to show greater allocative inefficiency instead.)

Explain how market forces (of responding to the higher demand) work to achieve greater efficiency

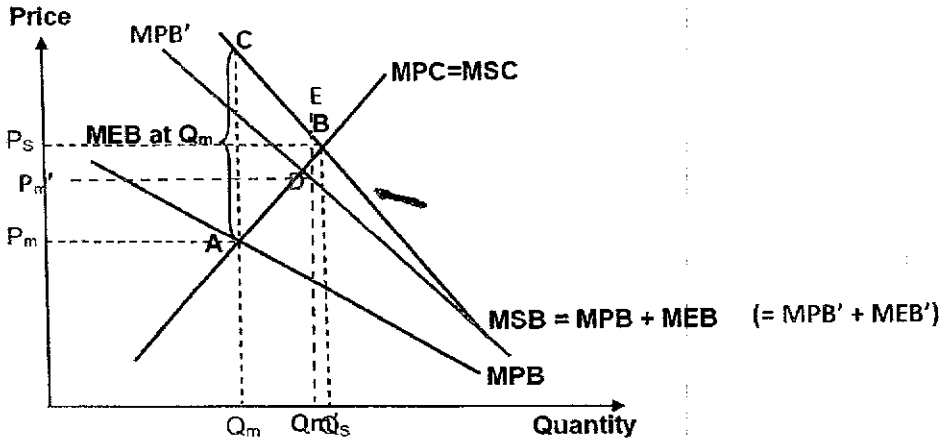
Figure 6 (need not redraw if already shown in part a)



- If market forces are allowed to respond to the higher demand, the market equilibrium will change from point b to point e and increase the sum of consumer and producer surplus (i.e. economic surplus) from area abc to area dec.
- Compared to the price ceiling, the increase in equilibrium quantity from Q1 to Q2 reduces the underconsumption of face masks instead of worsening the underconsumption like the price ceiling.
- It also results in a greater economic surplus than with the price ceiling (best seen if Figure 3 is superimposed onto Figure 4), resulting in a more allocative efficient outcome.

OR

Figure 7



- A higher market demand will shift the marginal private benefit from MPB to MPB' and increase the market equilibrium quantity of face masks from Qm to Qm', where MPB' = MPC, & reduce the underconsumption to Qs – Qm'. Hence the welfare loss falls to area DEB, reducing the allocative inefficiency due to the positive externalities.

(Note: MEB falls too as with more wearing face masks, there will be less third parties too.)

(An equally acceptable approach can be made if student use the imperfect info diagram to show smaller allocative inefficiency instead.)

Limitations of market forces in achieving greater efficiency

- However, the extent to which greater efficiency can be achieved with market forces depends on the extent to which the demand increases to achieve the socially efficient quantity of face masks.

- If the demand is higher due to greater awareness of the benefits of masks and less imperfect information, coupled with regulations that make mask wearing a rule, it is more likely that the rise in demand will be high enough to achieve the socially efficient outcome.

Trade-off with equity

- However, the higher demand will increase the market equilibrium price and make this basic good even more unaffordable to low-income groups, worsening the inequitable distribution of face masks based on purchasing power alone.

Conclusion (Which is more desirable)

- The surge in demand and prices for face masks prompted some government to intervene with price ceilings to achieve a more equitable outcome.

- However, with the shortage and potential formation of black markets, we can see that this approach may not necessarily result in a more equitable outcome.

- Furthermore, it is clear that such price controls distort the workings of the price mechanism and introduces greater inefficiencies into the market, worsening the inefficiencies already present due to the existence of the causes of market failure like positive externalities and imperfect information.

- Allowing market forces to respond to the higher demand would reduce the underconsumption of face masks due to the earlier mentioned causes of market failure.

- While it is clear that inequitable would be worsened, it is likely to be a short-run problem. The higher equilibrium prices would make it more profitable to produce face masks. In the long-run, it would encourage new producers to enter this lucrative market, increasing the total market supply.

- The rise in supply will not only increase equilibrium quantity and further reduce underconsumption, it will also reduce equilibrium price and make face masks more affordable, potentially resulting in a more equitable outcome in the long run as well.

- Furthermore, allowing market forces to work also means that governments can be part of the higher demand to procure masks to give to low-income families, forming a more effective way to address inequity in the short-run as well.

Level	Descriptors	Marks
L3	Breadth • Explains how price ceiling can result in a more equitable outcome AND how higher demand can result in a more efficient outcome. • Explains the trade-off between efficiency and equity for BOTH price control and market forces. Depth ○ Explains with detail, rigour and diagrams	8-10
L2	• Lacking in any one of the L3 criterions	5-7
L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4

Evaluation		
E3	• Takes a clear overall stand that is comprehensively justified by providing convincing evaluative comments on the relative importance of most of the points covered in the body	4-5

E2	• Takes a clear overall stand which is only partially justified as
	  ○ Only some of the points in the body were evaluated
	  ○ The overall stand was largely justified by the inclusion of additional concluding points to sway the overall argument
	  ○ The arguments used to evaluate individual points were unconvincing or somewhat flawed
	• Evaluates at least one of the points covered in the body but the overall stand is unclear
	• Provides insightful opinion(s) which are however not directly relevant to the requirements of the question
		2-3

E1	• Provides unsubstantiated opinion(s)	1

Q3 Representatives from the food and beverage (F&B) industry have called on the Singapore government to provide more help, saying businesses have been hard hit by the Covid-19 restrictions such as the ban on dine-in customers. Border closures has also thwarted firms from recruiting foreign employees. **Meanwhile many F&B firms have turned to digital platforms for online orders.**

(a) Explain how the Covid-19 restrictions have adversely affected the profits of an F&B firm. [10]

(b) Discuss whether smaller F&B firms like hawker stalls or larger F&B firms like restaurants are more likely to survive the pandemic. [15]

Part (a)

Suggested Answers

Profit of a firm is derived from Total Revenue (TR) less (minus) Total Cost (TC). Hence changes in revenue and costs will affect the F&B firm's profitability.

To slow the spread of Covid-19, the government has imposed various restrictions, including F&B firms are ordered to ban dine-in customers to reduce social contact. The populace is persuaded to remain mostly indoors, and international borders are closed, disallowing international travels. Some foreign employees are prevented from returning back to work in Singapore and without these foreign hires, the F&B firms have to pay higher wages to employ local workers from a smaller pool of labour, increasing its cost of production.

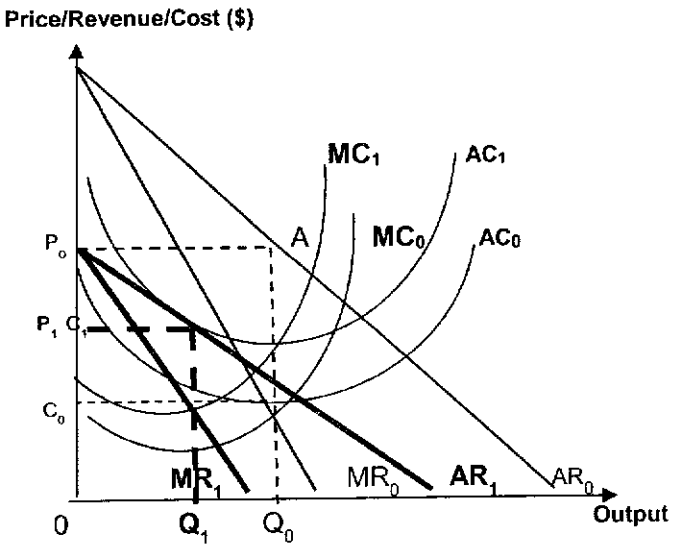
How the Covid-19 restrictions affect a F&B firm's profit is analysed by examining the impacts on its revenue and costs.

Body

The impact on F&B firm's revenue

The ban on dine-in customers will reduce the demand facing the F&B's firm. The demand curve or average revenue shifts down from AR_0 to AR_1, and marginal revenue from MR_0 to MR_1 as in Figure 1 below.

Figure 1: Fall in demand and rise in costs for an F&B firm
(Note that separate diagrams, one depicting the change in demand and another the change in costs can also be drawn to illustrate the same impact)



Based on profit maximising principle, the firm will equate MC=MR to produce Q_1 and sell the goods at P_1 (obtained from the demand curve) and the initial output at Q_0 and Price at P_0. The initial total revenue is P_0 times Q_0 and the new total revenue is P_1 times Q_1. Since $(P_1 x Q_1) < (P_0 \times P_0)$, we conclude that total revenue has fallen after ban on dine-in customers.

The impact on F&B firm's costs

The closure of international borders to the movement of people not only mean that it would be more difficult to hire foreign workers, the traditional source of employees for F&B firms, but also the F&B employees who have gone back home would be unable to return to Singapore to work. Firms would have to turn to hire from a smaller pool of local workers and to pay higher wages. Wages are a part of the variable costs for the F&B firm, and now the average and marginal costs will be pushed higher. As shown in Figure 1, both AC and MC shift up from AC_0 and MC_0 to AC_1 and MC_1 respectively.

The impact on F&B firm's profit

Synthesizing the two impacts together, from the firm's perspective, consumers pay a lower price due to lower demand and at the same time costs rise due to higher variable costs. The profit maximising price is at P_1 which corresponds to a lower output at Q_1 where MC_1 cuts MR_1. Price will decrease from P_0 to P_1 and unit cost will increase from C_0 to C_1 and thus unit profit falls.

Conclusion

The Covid-19 restrictions with the intention to reduce social contact has also made people less open to dining out and also more families preparing home meals themselves and with work from home (WFH), it has exacerbated less eating out. This has lowered the demand facing F&B firms. On the cost front, the restrictions not only raised higher variable costs due to higher wages payable, other costs are added on as firms turned to accepting online orders and subscribing to apps from delivery vendors, further eroding profits of the F&B firm. In short, the fall in demand and the rise in costs resulted in the fall in profits.

Level	Descriptors	Marks
L3	**Breadth** • Explain how profit of a firm is derived [the difference between revenue and cost (Revenue-Cost)]. • Cover both the changes in firm's demand and costs arising from the Covid-19 restrictions. • Explain how the changes in demand and costs affect the equilibrium price and output. • Address how changes in revenue and costs of firm affect the profit of the firm. **Depth** • Explain with rigour and analyse using relevant economic concepts and theories. • Analyse and with the aid of examples, how Covid-19 restrictions affect a firm's demand and costs. • Analyse the changes in the equilibrium price and quantity. • Explain how changes in demand and supply affect a firm's profits (there must be at least one diagram that depicts the changes in demand or costs, alternatively both changes are reflected in the same diagram). • Synthesize the impacts on revenue and costs to explain the effect on profit of the firm. To score L3, essay must show (1) clear, well written analysis using appropriate economic concepts (2) how profit is derived and (3) the adverse change in profits after the following 2 events: fall in demand AND the rise in costs. To score top marks of 9 to 10, the essence of above pointers must be captured in the essay, otherwise only up to 8m will be awarded.	8-10
L2	• Lacking in any one of the L3 criterions	5-7
L1	• Largely irrelevant response • Descriptive response with minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4

(b) Discuss whether smaller F&B firms like hawker stalls or larger F&B firms like restaurants are more likely to survive the pandemic. [15]

Introduction

From part (a), it is noted that during the Covid-19 pandemic, together with the government restrictions, F&B firms faced a reduction in total profits and possibly earn subnormal profits, making them vulnerable to closure.

For firms to survive the pandemic in the long run, a firm's TR must be at least equal to TC. While operating its business in the SR, the firm's TR must be at least equal or exceed its TVC for it not to shut down.

Some aspects of the nature of hawker stalls and large restaurants could help determine their survival ability in this pandemic, for example, if hawker stalls sell largely inferior goods, whilst restaurants normal or luxurious good, then the likelihood of hawker stalls surviving will be higher.

To reduce vulnerability to closure, it is essential for firms to employ cost cutting measures to remain competitive so as to hold on to at least some market share in a shrinking consumer base. Strategies that firms can employ to reduce vulnerability to closure can be categorised into those that boost demand and hence revenue and those that reduce total costs.

In this essay, I shall examine how competition strategies are used by both small F&B firms (hawker stalls) or larger F&B firms like restaurants are used and analyse their likelihood to succeed with these strategies and thus survive the pandemic. In addition, I would consider the inherent nature of these F&B firms and come to a conclusion at the end what feature is critical and which F&B firms will likely to survive the pandemic.

Body

Price strategies – lowering of prices

Both small and big firms face a more competitive environment during the pandemic, not only do they compete in their own category of firms but also stretched wider into the broader market, for example, restaurants are not only competing amongst themselves, but they are also likely to compete with hawker stalls near the vicinity as consumers are now more cautious in their spending behaviour.

Lowering prices to attract and retain consumers are practised by both small and large firms. However, if prices set is so low, the firm may suffer a huge loss in profits. Usually firms use past accumulated supernormal profits to cushion the loss, and generally larger restaurants rather than the smaller hawker stalls have such profit reserves to enable them to use this strategy.

Firms can also attempt to reduce costs so that they could lower prices. It may be argued that hawker stalls are mostly run as family business by family members or relatives, hence the higher employment costs arising from border closure may not affect them so drastically compared to restaurants that may need to hire foreign workers.

One way to lower cost is go for cost sharing by merging with other firms. A merger or a collusion would not only boost market share but also reap economies of scale, for example, combining the delivery service of different firms to customers in the same vicinity or locations help lower costs.

Other cost-cutting measures like retrenching workers to reduce variable costs could also be adopted. However, the larger restaurants are likely to have excess service staff unlike hawker stalls which normally run on minimal number of workers.

Non-price strategies

Some possible non-price strategies that can be used include engage in advertising & promotion and product innovation to create product awareness and boost the chance of survival and bolster market share.

Advertising can also help to build publicity and increase competitiveness of the product by persuading and strengthening consumers' tastes and preferences towards the product. This could help reduce the fall in demand for the firm's product during the pandemic. Product innovation and introducing new recipes through innovation can attract more consumers and both restaurants and hawker stalls could try them.

F&B firms can advertise online and accept orders to increase their sales like partnering with delivery vendors such as GrabFood, Food Panda and Deliveroo. Joint promotion of free delivery fees with a certain minimum order can be offered to attract more customers.

Other considerations

It is often said that hawker stalls' food may be considered as an inferior good in the eyes of consumers. The current pandemic has induced a global recession, and therefore greater amount of inferior good may be demanded when income falls, compared to normal or luxurious goods that are sold in restaurants. This seems to benefit the hawker stalls more than the restaurants.

Conclusion

F&B firms can employ strategies to reduce costs and boost revenue to reduce their vulnerability to closure during a recession. It may seem that larger restaurants would have the resources to compete, innovate and advertise their product to prevent closure compare to smaller hawker stalls.

Non-pricing strategies like advertisement and innovation would be more applicable to firms with significant market power like restaurants because they have more funds from past profits. These strategies would not have been feasible for smaller hawker firms which tend to earn only normal profits in long run because of the low barriers to entry.

However, the success of advertising & promotion and innovation is uncertain and large-scale advertisements to shift consumers' tastes and preferences can be very costly as it requires time to change consumers' purchasing habits.

The adoption of online apps allows for the expansion of network bandwidth which may help both the hawker stalls and restaurants to tap on a network to expand its scale of production to gain internal economies of scale (EOS).

Whether a large firm like a restaurant or a small firm like a hawker stall is more vulnerable to closure during the pandemic depends largely on the attributes and behaviour of the individual firm. Some hawker stalls are well-liked with strong brand loyalty and there are also some restaurants that have a large following. The success of a F&B firm lies predominantly in the food that they sell and it is the consumers' tastes and preferences that holds the key to the survival of the firm. F&B firms generally have high variable costs as the serving of food is labour intensive, so unless the demand curve of a firm is high with strong demand, the ease of it falling below a high AVC in a recession is highly probable in the SR. Thus, we would not generalise that it is the larger firms like restaurants or the smaller hawker stalls that are likely to survive the pandemic. The key to survival lies more on the demand side of the firm than the costs.

Level	Descriptors	Marks
L3	Breadth • Address the meaning of 'survive the pandemic' and identify the shutdown conditions. • Cover the crucial features inherent in the nature of small F&B firms and large F&B firms that are useful attributes that could help them to survive. • Explain the 2 competition strategies [price and non-price] that F&B firms could use to compete for survival in the pandemic [at least one type of strategy must be analysed]. Depth • Explain with rigour and analyse using relevant economic concepts and theories. • Explain with rigour and analyse the competition strategies to be used by both types of firms with detailed and clear examples. • Consider those features inherent in the nature of the F&B firms that would help in their survival or show how firms could draw on these desirable attributes and use them as their strategies.	8-10
L2	• Lacking in any one of the L3 criterions	5-7
L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4
	Evaluation	
E3	• Provide a clear judgement to the requirement of the question after considering most of the suggested pointers in the body. The top score will be for an essay that besides providing reasonable evaluative comments covering those pointers that are mentioned in the body discussion, but also able to single out the reason or factor that is crucial together with a stand of whether is it really dependent on the size of the firm to decide whether it can survive the pandemic.	4-5
E2	• Has evaluation but is only partially justified such as o Only some of the points in the body were evaluated o The overall stand was largely justified by the inclusion of additional concluding points to sway the overall argument	2-4

	○ The arguments used to evaluate individual points were unconvincing or somewhat flawed • Evaluates at least one of the points covered in the body but the overall stand is unclear.	
E1	• Provides unsubstantiated opinion(s)	**1**

4	The Singapore dollar weakened to a four-month low after the central bank said there's "sufficient room" for the currency to ease if the economy weakens due to the impact of the coronavirus. Source: *The Star*, Feb 2020		
	(a)	Using the circular flow of income model, explain the effects on national income when a country's exchange rate depreciates.	[10]
	(b)	Discuss the extent to which the depreciation of the Singapore dollar in 2020 would conflict with its government macroeconomic objectives.	[15]

Part (a)

Introduction

- CFI is a model that explains how economy is organised & how participants in the economy interact with one another.

Body

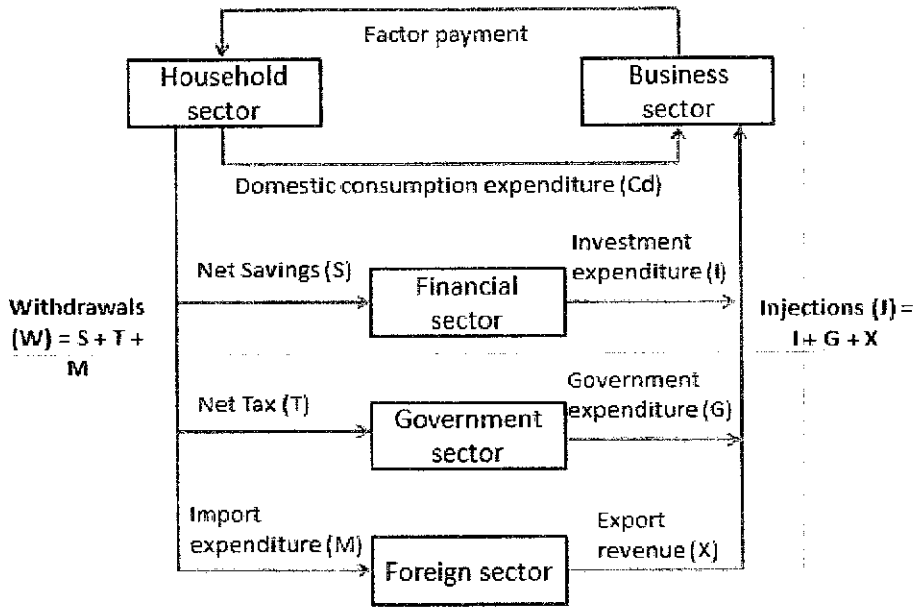


Figure 1: Circular flow of income in an open (4 sector) economy

- Figure 1: income flows from firms to households in the form of factor payments, & back again from households to firms as consumer expenditure on domestically produced G&S (C_d).
- An injection represents (autonomous) spending on final G&S that does not arise from current income.
  - Injections comprise investment (I), govt expenditure (G) & expenditure on exports (X).
- A leakage (also known as withdrawal) is any part of the income that is not passed on as part of the circular flow but is withdrawn, which means it is not used to purchase other domestic G&S.
  - Withdrawals comprise net saving (S), net taxes (T) & import expenditure (M).
- CFI is in equilibrium when total injections = total withdrawals.
- CFI can expand from a rise in injections or a fall in withdrawals.
- Depreciation of domestic currency: Px ↓ in FC, Qdx ↑, Px unchanged in DC & Qdx↑ , X in DC ↑
- Depreciation of domestic currency: Pm ↑ in DC, Qdm ↓ , M in DC ↓ if |PED|m < 1

- With this ↑ in export injections & ↓ in import withdrawals, the economy will be in a state of disequilibrium, trigger a process that will bring NI back to a state of equi where injections = withdrawals again.

- Assume that (net) X ↑ by $100m, Injections > withdrawals , total expenditure on G&S > current output produced, firms face depletion of stocks by $100m, firms encouraged to produce more output & employ more factors of production, pay out more wages, salaries, π, rent & interest to households, NI will ↑ by $100m with a corresponding ↑ in national output & employment of resources.

- ↑ in NI by $100m will trigger another round of spending as when households receive the additional factor payments, they will spend more on domestic G&S.

- Assume MPCd = 0.6, household spend $60m (0.6 x $100m) on domestic G&S while remaining income is leaked out (ie. $40m is withdrawn from the flow) as household will save some of this ↑ in income, make tax payments to the govt & spend on imported goods from the foreign sector.

- Additional household spending of $60m will cause another round of depletion of stocks which will boost income of another group of households as firms once again expand output by hiring more factors of production to meet ↑ in DD, further ↑ in household spending by $36m (0.6 x $60 *as MPCd=0.6*) while $24m is leaked away in the form of savings, tax payments & spending on imported goods.

- ∴, each time there is spending by households, additional income is generated with the magnitude of each change in spending & income getting smaller due to withdrawals at the same time continue until total ↑ in withdrawal (W) = initial ↑ in injection (J) = $100m NI stop rising, & so will withdrawals Equi reached when total withdrawals = total injections.

- This is called the multiplier process whereby a change in injections causes a multiplied change in the NI.

- The multiplier, k, measures the number of times that the change in income (ΔY) is greater than the initial injections (ΔJ). k = 1/ MPW. In this case, MPW = 0.4 (i.e. 1 – MPC_d = 1 – 0.6). Hence, the k value is 2.5. ∴, the ↑ in NI is $250m which is 2.5 times the initial ↑ of $100m.

Conclusion

- In conclusion, an initial ↑ in exports of $100m will eventually lead to an ↑ in equi level of NI that is > $100m. The total ↑ in NI depends on the value of the multiplier. The larger is the multiplier, the larger the ↑ in NI.

Level	Descriptors	Marks
L3	• Breadth o Explains the components of the CFI model. o Explains the impact of depreciation on exports and imports o Explains the multiplier process • Depth o Applies relevant economic concepts or theories o Explains with rigour and detail o Explains and illustrates with relevant *diagram* and examples * Students are not expected to analyse the potential impact of a fall in imports on the size of the multiplier as the in M need not lead to a fall in MPM.	8-10
L2	• Lacking in any one of the L3 criterion	5-7
L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4

	(b)	Discuss the extent to which the depreciation of the Singapore dollar in 2020 would conflict with its various government macroeconomic objectives.	[15]

Introduction

- The macroeconomic objectives of a government are economic growth, low inflation; price stability, low unemployment; full employment and a healthy balance of trade.

Body

<u>Depreciation results in a conflict with macro objectives to a large extent</u>

<u>Conflict with price stability</u>

1. Depreciation of SGD, Pm in DC ↑, SRAS ↓, GPL ↑, potential **imported (cost push) inflation.** [Illustrate using AD-AS diagram]

Evaluative point:

- Extent: This can be particularly serious given the nature of SG's economy – lack of natural resources, high import reliance vulnerable to higher import prices.

2. Depreciation of SGD, NX ↑ (elaborated in a) AD ↑ , GPL ↑ (if lack spare capacity) potential **demand-pull inflation.** [Illustrate using AD-AS diagram]

Evaluative point:

- Extent: SG was in a recession in 2020, substantial spare capacity exists, unlikely AD ↑ till demand-pull inflation.

- Extent: Furthermore, high leakages (high MPM – lack natural resources, & MPM – CPF), small multiplier, limits ↑ in AD when NX ↑.

<u>Conflict with inclusive growth</u>

3. Depreciation may increase the overall cost of living and hence result in **less inclusive growth** as the price of imported necessities increases

Evaluative point:

- Extent: Prices of necessities are partly controlled by the prices at SG's major supermarket NTUC, which is a social enterprise with the mission of keeping the cost of living low in Singapore. Hence likely would limit the increase in prices of necessities even if at the expense of its profitability.

- Extent: depends on the extent to which the government acts to help the lower income groups who may be impacted more disproportionately higher import prices. But likely govt. takes action since inclusive groups have been a key agenda by the ruling party in recent years.

<u>Depreciation does not result in conflicts with macro objectives/result in a conflict only to a small extent</u>

- Depreciation, as explained in part a) results in positive impacts of macro objectives via

  A) Higher actual growth (real NI increase via k effect)
  B) Lower cyclical unemployment
  [Explain above 2 points with reference to AD-AS diagram]

  C) Improvement of BOT/Improvement of BOP via current account

Evaluative point:

- However, SG might be labelled a currency manipulator which might provoke retaliatory measures from trading partners, possibly leading to X ↓, NX ↓, worsen BOT.
- Also, SG's NX may not necessarily improve as a result of depreciation due to the context of the COVID induced recession which reduces the income levels of SG's trading partners and hence demand for SG's exports → possibly X may still decrease and BOT may worsen
- ***Hence depreciation may result in a small extent of conflict with external goals (BOT)***

- *On the other hand, there* ***may not be any conflict with external goals*** *if SG engages in FTAs to mitigate the potential "small" extent of conflict with BOT as mentioned above.*

- SG might also **not experience an increase in AD** and hence actual growth due to reasons such as
- Investors may lose confidence in SG in the future leading to a decrease in FDI and hence limited actual and potential economic growth
- This may cause AD to decrease and cyclical unemployment to arise

- *On the other hand, there* ***may not be any conflict with internal goals*** *given SG's continued attractiveness to FDI in the form of:* productive & skill workforce, stable government, transparent policies, pro-business environment, transport hub, etc.

- *On the other hand, there* ***may not be any conflict with internal goals (unemployment)*** *due to SG's policies to assist businesses most adversely affected by the depreciation of the SGD.*

Hence depreciation may result in a small extent of conflict with internal goals (economic growth and unemployment).

Conclusion

- The depreciation of the SGD can certainly lead to conflict with its various macroeconomic objectives.

- However, there are many factors, such as the nature and state of the Singapore economy in 2020 to consider as these factors can limit or aggravate the conflicts with the various macroeconomic objectives.

- From the earlier analysis considering the various factors, it is clear that the conflicts arising from the depreciation of the SGD is likely to be small. This is largely due to the fact that the depreciation is likely to be small in the first place, given Singapore's managed float system that has exchange rate stability as one of its main tenets.

- Amongst the various conflicts possible, the most serious conflict is likely to be with its macroeconomic objective of price stability. This is due to the import-reliant nature of the Singapore economy. The Covid global pandemic in 2020 has caused major supply-chain disruptions that could potentially lead to shortages and spike in prices of imported goods. These are factors that are beyond Singapore's control and a depreciation of the SGD can aggravate this imported inflation and conflict with this goal the most.

Level	Descriptors	Marks
L3	Breadth • Explains at least 3 macroeconomic objectives • Explains situations in which conflicts arise AND in which conflicts do not arise • Explains both internal and external macroeconomic objectives Depth ○ Explains with detail, rigour and diagrams	8-10
L2	• Lacking in any one of the L3 criterions	5-7

L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4
	Evaluation	
E3	• Takes a clear overall stand that is comprehensively justified by providing convincing evaluative comments on the relative importance of most of the points covered in the body	4-5

E2	• Takes a clear overall stand which is only partially justified as
	  ○ Only some of the points in the body were evaluated
	  ○ The overall stand was largely justified by the inclusion of additional concluding points to sway the overall argument
	  ○ The arguments used to evaluate individual points were unconvincing or somewhat flawed
	• Evaluates at least one of the points covered in the body but the overall stand is unclear
	• Provides insightful opinion(s) which are however not directly relevant to the requirements of the question
		2-3

E1	• Provides unsubstantiated opinion(s)	1

PRELIMS EQ5

5(a) **Explain the internal and external factors that are likely to cause a balance of trade deficit.**

[10]

(b) Discuss whether a country should be concerned about an increasing balance of trade deficit. **[15]**

(a) Explain the internal and external factors that are likely to cause a balance of trade deficit. [10]

Introduction

- The balance of trade contributes to the largest proportion of currency flow in the current account balance for most countries. A current account deficit normally arises because of the trade deficit (i.e. export revenue (X) is less than import expenditure (M) or net exports (X-M) is negative)

Body	
Domestic Factors	**External Factors**
Rise in inflation rate relative to other countries - This can erode a country's exports competitiveness worsening BOT	**"Contagion" Effect: Globalisation** - Recessions in recent years (US-China Trade war, Covid-19 disruption to trade & de-globalization trend) cause fall in exports revenue, Worsen BOT *Impact on problem:* Especially a significant problem for countries like Singapore **Nature of economy is however a domestic factor**: Small domestic market therefore depends heavily of (X-M) to fuel growth) vs another country like China who would be able to turn inwards to domestic C and I to drive growth
Loss of comparative advantage - Due to changes in factor endowment (eg. depletion of resources such as oil for some of the Middle east oil-exporting countries) - Lack of skilled labour to support expanding sectors eg Financial Technology (FINTECH)	**Loss of comparative advantage** - Other countries gaining competitiveness eg. China opening its economy led to many countries such as US losing their CA in manufacturing / labour intensive sectors
Explain impact of loss of CA in relation to goals Could lead to fall (X-M), worsening BOT	
Government policies - Eg. How the Singapore government needs to have a gradual appreciation of SGD to moderate imports-price push inflation due to our lack of resources and need to imports But it hurts exports competitiveness, worsens BOT - However it is necessary to keep the Singapore dollar strong as it helps moderate cost-push inflation which will in turn hurt our exports price competitiveness as well. - For other countries, appreciation of domestic currency may have an expenditure switching effect	**Government policies** - What other economies do could have repercussions on the economy eg. With the backdrop of recession, many economies are using protectionist measures or devalue their currencies to reduce their trade deficit and revive growth quickly in their economies - That would in turn hurt exports revenue of their trading partners - Affect BOT

ie import may be cheaper in terms of domestic currency, resulting in greater TEm	
Excessive rise in income & expenditure on import fuelled by expansionary FP & MP: Over optimism/ irrational exuberance leads to AD & NI rising rapidly and if **coupled by domestic policies** eg fall in interest rate, or reduced tax rate resulting in greater disposable income & expenditure on import. - This is a major problem for countries with **large domestic market** & which have a **high propensity to import** eg Indonesia where domestic expenditure on import can result in BOT deficit. **<u>Industrialization & Economic Restructuring</u>** ↑M on capital goods and raw material such as crude oil due to industrialisation – BOT may suffer deficit in the short run.	

Conclusion/Synthesis:

The internal factors that are likely to cause a balance of trade deficit are:

Rise in inflation rate relative to other countries, loss of comparative advantage relative to competitors (eg depletion of resources such as crude oil or minerals), domestic government policies such as appreciation and expansionary FP & MP (eg ↑M - Overconsumption of Imports due to affluence and habits or domestic DD side policies) or ↑M on capital goods and raw material such as crude oil due to industrialisation

The external factors that are likely to cause a balance of trade deficit are:

Adverse "Contagion" effect of globalization, adverse effect of protectionism, unfair trade (eg undervaluation of currency) & the gain of CA of competitors (eg ↓X - Loss of comparative advantage due to competition from emerging economies)

For a country like Singapore, the nature of its economy, which is small and open, would make it to be very vulnerable to global conditions.

Level	Descriptors	Marks
L3	Breadth & Application A clear and detailed answer that explains the internal & external factors causing current account deficit. • Analyses with the expected theoretical scope • Analyses entire scope as suggested by the question • Explains at least 3 <u>distinct</u> points of analysis – Both internal & external factors should be covered • Depth o Applies relevant economic concepts or theories o Explains with rigour and detail o Explains and illustrates with relevant *diagrams* and examples Capped at 8 max if there is no examples	8-10
L2	• Lacking in any one of the L3 criterions Capped at 7 max (assuming all analysis is well done with examples) if : 1) Only on M / X	5-7

	2) Only internal / external factors 3) No classification of factors 4) Only 2 distinct factors	
L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4

(b) Discuss whether a country should be concerned about an increasing balance of trade deficit. [15]

Introduction

Current Account record of all TRADE flows vis-à-vis the rest of the world. A BOT deficit occurs when the import expenditure exceeds the export revenue. A country that is facing a persistent trade deficit is not earning enough from its exports to pay for its imports. Most economies aim for a slight surplus as there may be adverse consequences associated with BOT deficit.

CONSEQUENCES OF A DETERIORATION IN BOT

Should be concerned	**Need not be concerned**
LT Adverse consequences on the economy	ST or Temporary Adverse impact on the economy
If the deficit is large & persistent	If the deficit is small & temporary
Caused by loss in CA & erosion of export competitiveness Contractionary impact on economy – slower growth and higher unemployment	Caused by ↑ M of capital goods and raw material such as crude oil due to industrialisation or economic restructuring or transformation
Draw AD & AS diagram with backward multiplier effect on NI With reference to Diagram, a fall in the net exports can decrease the aggregate demand (AD) from AD0 to AD1. Through the multiplier process, it will lead to a more than proportionate decrease in national income, from Y0 to Y1. At the same time, cyclical unemployment will increase as seen from the increase in output gap from Y0YF to Y1YF since the lack of demand for output will mean lesser factors of production are needed and thus workers are retrenched. With a fall in incomes, demand for goods and services decreases and firms hire less workers and reduce production. The macroeconomic effects of a fall in AD reduce investor confidence, leading to fewer investments by the firms With the contractionary effect on the economy due to the fall in net exports, consumers' income falls and purchasing power shrinks. This reduces consumers' demand for goods and services which in turn reduce consumption and increase savings. The purchase of fewer goods and services also lowers the material standard of living of consumers	If the deficit is due to import of capital goods it can increase the productive capacity of the country and create jobs. E.g. Japanese investment in UK not only has resulted in import of capital goods (temporary BOT deficit) but also benefited the UK economy in the long run through introduction of new working practices & increase labour productivity. Moreover, for a developing country, a temporary current account deficit in the initial years of development could be due to imports of capital goods (rather than consumption goods). This facilitates capital accumulation and contributes to the growth of productive capacity and exports in the long run. With the eventual rise in exports, the current account should improve over time, possibly transforming from a deficit to a surplus.

The deficit in current account will result in a drawing down of foreign reserves When there is insufficient reserves, the BOT deficit result in borrowing (Indebtedness) & would be a burden to future generation as the debt & interest have to be repaid via tax revenue & possibly, this may lead to a higher tax rate. If a trade deficit is financed through borrowing, it is unsustainable in the long term as the country will be burdened with interest payments. Countries with large interest payments have little left over to spend on investment. E.g. Russia, Brazil and African countries had experienced repayment problems. If the deficit is financed by foreign multinationals investing in a country or purchasing assets, more of the country's future income will flow out to foreigners in the form of interests, rents, dividends and profits (via the primary income balance on the current account). If there is a depletion of foreign reserves, this means that these reserves are unavailable for future purchase of imports for consumption. Hence, a country that is facing a persistent current account deficit is merely enjoying higher current consumption at the expense of the welfare of future generations.	If economy is over-heated, temporary BOT deficit can help ease demand-pull inflation The temporary BOT deficit has a cooling down effect on inflationary pressure, it can help reduce the rate of increase in cost of living and slow down the erosion of export price competitiveness If the temporary BOT deficit is due to high imports of consumer goods, it may contribute to higher material SOL and can be corrected by increasing export revenue or reduced export expenditure in subsequent years.

Conclusion:

Whether a country should be concerned about an increasing balance of trade deficit would depend on its nature ie the extent, duration and causes of the deficit. A large deficit which not only draw down a country's reserves but also resulted in national debt would be of greater concern than one which is of a small magnitude. A temporary BOT deficit caused by structural changes as a country progress to another phase of its development may face BOT deficit in its initial years due to import of capital goods. This is of lesser concern than a persistent and increasing BOT deficit caused by loss of CA or productivity. Moreover, BOT deficit may help slow down inflationary pressure if the economy is facing SS side bottleneck as AS is not growing in tandem with AD. Generally, an increasing BOT deficit would be of greater concern if it is large and persistent due to its adverse effect on growth and employment.

Level	Descriptors	Marks
L3	• Breadth & Application o Covers 2-sided arguments: whether increasing BOT deficit is of concern & not of concern o Analyses with the expected theoretical scope *(e.g. extent, nature/cause & duration of the BOT deficit)* o Analyses entire scope as suggested by the question o Explains at least 3 distinct points of analysis • Depth o Applies relevant economic concepts or theories o Explains with rigour and detail o Explains and illustrates with relevant *diagrams* and examples Capped at 8 max if there is no examples	8-10

L2	• Lacking in any one of the L3 criterions	5-7
L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4
	Evaluation	
E3	• Takes a clear overall stand that is **comprehensively** justified by providing **convincing** evaluative comments on the **relative importance** of **most** of the points covered in the body	4-5
E2	• Takes a clear overall stand which is only partially justified as o Only some of the points mentioned in the body were evaluated o The overall stand was largely justified by the inclusion of additional concluding points to sway the overall argument o The arguments used to evaluate individuals points were unconvincing or somewhat flawed • Evaluates at least one of the points covered in the body but the overall stand is unclear • Provides insightful opinion(s) which are however not directly relevant to the requirements of the question	2-5
E1	• Provides unsubstantiated opinion(s)	+1

Q6 Singapore recession forecast for 2020 worsens to between -4% and -7%.

Source: *The Business Times*, May 2020

(a) Using AD-AS analysis, explain the key determinants of actual and potential growth. [10]

(b) Discuss whether the size and openness of Singapore's economy would influence its choice of macroeconomic policies to counter the recession. [15]

Suggested answer

Actual growth refers to the percentage increase in a country's real gross domestic product (GDP) over a period of time, usually a year. Potential economic growth refers to an increase in the country's productive capacity. Actual growth occurs when there is an increase in the country's Aggregate Demand (AD), intersecting with the Aggregate Supply (AS) at a higher national output level, while potential growth occurs when there is an increase in the country's Long Run Aggregate Supply (LRAS).

Determinants of Actual Growth

One of the key determinants of actual economic growth would be the level of confidence in the economy. When there is optimism in the economy such that consumers and firms expect future incomes and profits to increase, it would encourage them to increase consumption and investment. Since consumption and investment are components of aggregate demand, this would lead to an increase in aggregate demand, which in turn leads to a multiple increase in national income through the multiplier process. Hence increased optimism in the economy leads to actual economic growth.

Another determinant of actual economic growth would be the economic growth of the country's major trading partners. This would affect the external demand for the country's goods and services. When its trading partners experience a recession, their incomes and purchasing power falls, which forces them to reduce consumption, especially of imported goods. Therefore, the country would experience a fall in export revenue and its aggregate demand falls, leading to a fall in actual economic growth.

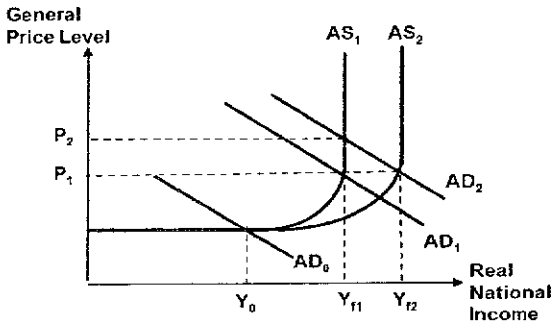
Therefore, the more dependent a country is on trade to drive its economic growth for example Singapore, the more the economic growth of its major trading partners is a key determinant of its actual economic growth. In comparison, countries like China who can depend on their domestic market for a significantly larger proportion of the demand for their output, would not be as greatly affected by the economic growth of their trading partners.

Determinants of Potential Economic Growth

Potential growth is affected by changes in the quantity of resources in the economy. One of its key determinants would hence be changes in the size of the country's labour force or its level of capital accumulation. For example, Singapore is concerned about its slow population growth, which may hinder the economy's potential growth in the future. More investment and capital accumulation in the economy also allows for potential growth as the capacity to produce more goods and services in the future will increase.

The second determinant of potential economic growth would be the quality of its resources and the level of technology in the economy. For example, with a higher level of education/ skills or technology in the labour force, there would be an improvement in the quality of labour, leading to an increase in labour productivity and an increase in the potential output of the economy. These would mean a higher Long Run Aggregate Supply curve than a country with a lower skilled/educated labour force or a lower level of technology. This explains Singapore's emphasis on education, skills training and investment in technology that has allowed her to enjoy relatively high rates of potential growth despite our limited resources.

Figure 1: AD/AS Diagram to illustrate actual and potential economic growth



- Initially, real output is at Y_0 and the economy is not operating at full employment.
- An increase in AD from AD_0 to AD_1 will raise the real output from Y_0 to Y_{f1}. This increase represents an increase in actual output or actual growth.
- For economic growth to be sustained in the long run, there would also have to be an increase in potential output, AS_1 shifts right to AS_2, which represents potential growth.
- When AS shift rightwards together with the increase in AD, output is able to increase beyond Y_{f1} allowing for further actual growth as production capacity increases.

Conclusion

In conclusion, the level of confidence and economic growth of a country's major trading partners are the key determinants of actual economic growth, while the size of labour force and level of education/ skills and technology are the key determinants of potential economic growth.

Level	Descriptors	Marks
L3	• Explains the key determinants of actual growth • Explains the key determinants of potential growth • Explain at least 3 distinct points • Illustrates using AD/AS diagram and analysis	8-10
L2	• Lacking in any one of the L3 criterions	5-7
L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	1-4

(b) Discuss whether the size and openness of Singapore's economy would influence its choice of macroeconomic policies to counter the recession. [15]

Introduction

The small size of the Singapore economy would imply a small and limited domestic market with small population size.

It will mean that Singapore will have to seek external growth in order to achieve ideal growth levels – net exports and foreign direct investments are important. In another words, Singapore's aggregate demand for goods and services is heavily reliant on external sources, such as exports and FDI, as compared to domestic drivers of consumption and government expenditure.

Also, for Singapore, its small size also comes with a general lack of resources, which makes it dependent on imports of both raw materials and final goods and services. Import dependence create increased vulnerability towards import disruptions and global recession.

Macroeconomic policies include

- Fiscal policy
- SG exchange rate policy which is also its Monetary policy
- Supply side policies

Body

Thesis: Size and openness affect choice of macroeconomic policies in countering recession

Size and openness affects the effectiveness of fiscal policy

- Expansionary fiscal policy involves an increase in G and/or reduction in direct taxes. An increase in G is a direct injection into the economy, AD increases. A reduction in corporate tax increases post-tax profitability of firms, incentivising firms to increase investments. This causes I to increase. A reduction in income tax increases disposable income, increasing the ability of households to consume. This causes C to increase.

- Small and open economies tend to have relatively smaller C, I and G relative to X and M. Such economies tend to have relatively large X as the need to export to access large global markets. They also tend to have relatively large M due to relatively less abundant and diversified natural resources. Singapore's economy annual trade value of (X+M) is more than 3 times the GDP.

- Small and open economies tend to have smaller multiplier values due to higher MPW, which comprises MPS, MPT, MPM.

- From above, we note that expansionary fiscal policy for countering a recession tend not to be effective for small and open economies as the multiplier size will be relatively smaller.

Size and openness affects the effectiveness of exchange rate policy.

- Small and open economies are more reliant on X and M components of AD, hence exchange rate policy can be used to counter a recession.

- During a recession, a small and open economy can implement depreciation of its currency to stimulate the economy. Depreciation of the currency causes the price of exports (in foreign currency) to fall and the price of its imports (in local currency) to increase.

- Measured in the local currency, the value of exports will increase, whilst for value of import, if it has a price elastic demand, will fall. Net export (X-M) increases and as a component of AD, AD increases as well.

- However, depreciation may also lead to higher cost push or imported inflation, lowering or shifting AS to the left, resulting in a fall in economic growth and even a recession.

Supply-side policy

- Examples include government subsidies skills upgrading to improve productivity of labour force. This helps to lower COP as well as increase the production capacity of the economy. Lowering COP helps the economy to become more competitive, can thus stimulate an economic recovery. [Can also cite other examples of supply-side policy that brings an increase in economic activity].

- Though supply side policy is adopted by both small, open and large economics to improve competitiveness in the short and long term, small economies are more vulnerable to structural changes especially when there are shifts in comparative advantage in the global market whenever there is a global recession.

- During a global recession which is currently induced by the pandemic, structural changes are likely to occur and hence for countries need to adopt supply side policies to ease out of recession and going forward prepare for 'new normal' in the future. It is more crucial small and open economy like Singapore to be equipped with this policy to make structural changes.

Anti-thesis: Other factors affect choice of macroeconomic policies in countering a recession

Sentiments of households and firms affect effectiveness of policies

- Expansionary fiscal policy such as cutting income or corporate taxes and providing direct subsidies can be less effective as it depends on the decisions of the households and firms to continue to consume and invest respectively which is affected by their sentiments and expectations of future economic conditions.

- On the other hand, if expansionary fiscal policy which involves direct injection into the economy is adopted, this will be more effective in times of recession.

Ability to finance fiscal deficits

- Economies that have significant national debt may lack the financial ability to conduct expansionary fiscal policy during a recession. If such an economy finances its expansionary fiscal policy through borrowing, it may result in the crowding-out effect which reduces the effectiveness of the policy.

Trade-offs in macroeconomic objectives

- Depreciation policy can cause significant imported inflation. As such, the extent of depreciation that can be pursued may be limited by this macroeconomic objective trade-off. If inflation is a significant macroeconomic problem, a depreciation policy may not even be feasible.

[Could also accept analysis of any factors which affects the choice of macroeconomic policies in countries.]

Conclusion

- Although without doubt, the openness and small size of the Singapore economy affect the choice of macroeconomic policies could adopt to counter the current global pandemic induced recession, there are other factors unique to its economic situation which would also affect the policy choices.
- Size and openness tend to influence the choice of demand-management policies more significantly. Fiscal policies can be seen as more of a stopgap measure to temporarily boost Singapore growth.
- According to MAS, as the economy braces for recession, it eases the SGD in a measured move.
- As an open economy, SG has to ensure its currency remains competitive in the global market, thus only measured depreciation is seen. However, SG is also mindful of cost push inflation as it is dependent on imported resources and goods, hence it cannot be seen depreciating the currency by large extent to spur recovery unlike a bigger and less open economy.
- Though there is large leakage as an open economy and that G component in AD comparing with the external demand is small and hence may not be able to offset the fall in X, nonetheless in this current recession which is global in nature and induced by the pandemic. Hence the Singapore government spent about S$100 billion in 2020 to help businesses and those who become unemployed. It is fortunate that the Singapore government has sufficient budget to see through G expenditure without the need to go into debt.
- Therefore, the nature of Singapore economy as one that is small and open economy does have some influence in the macroeconomic policies, other factors seem to be having a larger influence such as expending a large fiscal spending focusing on jobs support and helping SMEs in the current recession.

Level	Descriptors	Marks
L3	**Breadth** • Answer which relates size and openness to macroeconomic policies when countering the recession. • Provide a breadth of macro-economic policy tools that include **both** demand-management and supply-side concepts. • Is sufficiently contextualised to the small and open economy of Singapore. • Explains other variables that will also influence the choice. **Depth** • Good elaboration of key arguments which clearly analyses how size and openness affects choices of policies to bring about economy recovery. • Good and accurate use of economic analysis	**8-10**
L2	• Lacking in any one of the L3 criterions	**5-7**
L1	• Largely irrelevant response • Descriptive response with non-existent or minimal or application of economic concepts or theories • Serious and pervasive conceptual errors	**1-4**

Evaluation		
E3	• Balanced answer with good breadth of discussion. • Substantiation of position taken through the use of examples. • Take a position on extent to which size and openness or other factors affects choice of policy; relative importance of size and openness vs other factors.	4-5
E2	• Only some of the points in the body are commented or evaluated • The arguments used to evaluate individual points are unconvincing. • Doesn't provide an insight of the overall argument. • Provides insightful opinion(s) which are however not directly relevant to the requirements of the question.	2-6
E1	• Provides unsubstantiated opinion(s) such as take a position on extent to which size and openness or other factors affects choice of policy but without substantiation or reason.	1