

NATIONAL JUNIOR COLLEGE
SH2 Preliminary Examinations for General Certificate of Education Advanced Level
Higher 2

ECONOMICS

Paper 1

9757/01**30 August 2021****2 hour 15 minutes**

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

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

Answer **all** questions.

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

This document consists of **9** printed pages and **3** blank pages.



NATIONAL JUNIOR COLLEGE
Economics Department

Answer all questions.

Question 1: Singapore's electricity industry

Table 1: Annual electricity tariffs¹ and consumption in Singapore

	2015	2016	2017	2018	2019
Average electricity tariffs (Singapore cents per kilowatt-hour)	21.7	18.9	20.7	22.9	23.6
Average household electricity consumption (kilowatt-hour)	468.4	475.6	444.3	421.5	430.6

¹Electricity tariff refers to the rate at which consumers are charged for using electricity.

Source: *Ena.gov.sg*, accessed 2021

Table 2: Annual import price of natural gas

	2015	2016	2017	2018	2019
Average price of natural gas (Singapore dollars per million metric British thermal units)	3.59	3.45	4.09	4.27	3.47

Source: *Indexmundi.com*, accessed 2021

Extract 1: Understanding Singapore's electricity industry

The electricity industry plays a significant role in the Singapore economy. With rapid growth, Singapore is very reliant on an efficient electricity system. The reliable supply of electricity, at a competitive price, influences the ability of Singapore to compete internationally.

Today, Singapore has one of the most reliable electricity systems in the world, maintaining high standards for the delivery of electricity to consumers. The process starts with the import of the source of electricity generation – mainly natural gas. 95% of Singapore's electricity is generated from natural gas. Natural gas, despite being a carbon-based fossil fuel, is a much cleaner source of electricity generation compared to coal. Electricity is then supplied by electricity retailers to consumers, delivered through the national power grid.

The cost of supplying electricity comprises two main components – about 73% fuel cost and 22% non-fuel cost. The fuel cost is mainly the cost of imported natural gas and the non-fuel cost is the cost of generating and delivering electricity to consumers. The latter covers mainly the costs of operation such as manpower and maintenance costs.

To ensure the reliability of Singapore's electricity supply, Energy Market Authority (EMA) adopts a forward-looking approach. Traditionally, most of Singapore's supply of natural gas comes from pipelines from Indonesia and Malaysia. With the liquefied natural gas (LNG) terminal that commenced operations in May 2013, LNG has started to play a bigger part in Singapore's electricity generation. LNG is readily available and expands Singapore's fuel options for its energy requirements.

LNG is natural gas that is stored in liquid form. It is turned into liquid using a refrigeration process. It shrinks the volume of natural gas by 600 times, thus making it easier to store. LNG is stored in heavily insulated

double-walled tanks. The LNG is then sent to re-gasifiers, which transform the LNG into its gaseous state for distribution via pipelines.

The LNG terminal began operations with two storage tanks, a regasification facility and throughput capacity of 3.5 million tonnes per annum (Mtpa). The government has been expanding the terminal ahead of demand. By January 2019, the terminal has four storage tanks and additional regasification facilities with a throughput capacity of 11 Mtpa.

Source: *Ema.gov.sg*, accessed 2021

Extract 2: Carbon tax in Singapore

In January 2019, Singapore implemented a carbon tax under the Carbon Pricing Act (CPA). To maintain a transparent, fair, and consistent price signal across the economy, the carbon tax is applied uniformly to all sectors. It will affect all industrial facilities in Singapore that emit 25,000 tonnes or more of greenhouse gases in a year. The only exception is land transport fuels, for which there are already excise duties to encourage the reduction of their use.

A carbon tax is a fee that is imposed by governments on the burning of carbon-based fossil fuels that include natural gas and coal. This is done to encourage reduction in the use of fossil fuels whose combustion releases greenhouse gases such as carbon dioxide, which are responsible for climate change.

Because power generators in Singapore emit more than 25,000 tonnes of greenhouse gases in a year when generating electricity, the carbon tax applies to the industry. In Singapore, a carbon tax of S\$5 would be imposed for each tonne of greenhouse gases emitted from 2019 to 2023. The carbon tax not only affects industries and businesses in Singapore, but also affects consumers who purchase electricity for their daily and household needs.

Source: *iswitch.com.sg*, accessed 2021

Extract 3: Decarbonisation of Singapore will be very challenging

Decarbonising Singapore has geographical, technological and economic challenges. Reaching net-zero emissions require adding less carbon dioxide to the atmosphere and removing carbon dioxide from the atmosphere. While our small size and location have been beneficial for our trade, the trade-off is that our geography handicaps effective carbon dioxide removal approaches in Singapore. We lack large forested areas where we can replant fast-growing native vegetation that provide large green spaces, which store carbon at scale. This also means that we do not have renewable energy potential from rivers and wind options. Strong sunshine in Singapore makes solar power our only viable but limited source of renewable energy.

Decarbonising Singapore also requires Singapore to be more efficient in using carbon. A decade of promising decarbonisation of United Kingdom (UK) through the use of renewable energy and increased energy efficiency demonstrates the possibility of decarbonising an economy while growing the economy. The construction and modification of 'greener' buildings with higher energy labelling and performance standards as well as the nationwide implementation of electric vehicles are concrete steps taken to reduce emissions. The 'greener' buildings with super-low-energy use will also cool the atmosphere by reducing the island's urban heat effect. These efficiency measures are significant and will complement carbon removal technologies, especially in cities.

Source: Adapted from Winston Chow, *Channel NewsAsia*, 7 May 2020

Extract 4: The air conditioning trap: How cold air is heating the world

As the world gets hotter, buying an air conditioner is perhaps the most popular response to climate change. Air conditioners are extremely electricity-hungry appliances. The International Energy Agency (IEA) projects that air conditioning will use about 13% of all electricity worldwide by 2050, and contribute to two billion tonnes of carbon dioxide a year. All of these reports note the awful irony of a feedback loop: warmer temperatures lead to more air conditioning; more air conditioning leads to warmer temperatures.

At the same time, air-conditioning-hungry buildings were springing up. The all-glass skyscraper, a building style that, because of its poor reflective properties and lack of ventilation, often requires more than half its electricity output be reserved for air conditioning, became a mainstay. Homes and offices were increasingly being built in such a way that made air conditioning indispensable.

One step towards solving the problem would be to build better air conditioners. The invention of air conditioning predates both the first airplane and the first public radio broadcast, but the underlying technology has not changed much since. What has happened is we have expanded the affordability of the air conditioners, but as far as efficiency, they have not leaped. However, it is far from certain that the arrival of a more efficient air conditioner will significantly reduce global carbon emissions.

If we are not about to be rescued by technology, there remains a very simple way of reducing the environmental damage done by air conditioning: use less of it. But, as the ecological economist Julia Steinberger has written, any serious proposals to change our lifestyles are considered 'almost insane'. Calls to use it less are frequently treated as suggestions that people should die in heatwaves, or evidence of a malicious desire to deny other people the same comforts that citizens in wealthy countries already enjoy. How, then, can we get ourselves out of the air-conditioning trap?

Source: Adapted from Stephen Buranyi, *The Guardian*, 29 August 2019

Questions

- (a) With reference to Table 1:
- (i) State the difference between the change in average electricity tariffs and the change in average household electricity consumption in Singapore between 2015 and 2018. [1]
 - (ii) Calculate the value of the price elasticity of demand for electricity in Singapore in 2018 and explain **one** factor that could lead to this value. [3]
- (b) With reference to Table 2 and Extract 1, explain **one** reason for the change in average electricity tariffs in Singapore between 2015 and 2018. [3]
- (c) With reference to Extract 1, and using a diagram, compare the supply curves of natural gas for Singapore in May 2013 and January 2019, and explain any changes that have occurred. [5]
- (d) In the pursuit of allocative efficiency, discuss whether the implementation of a carbon tax in Singapore's electricity market can be justified. [8]
- (e) Using demand and supply analysis, discuss whether demand or supply factors in Singapore's electricity market are more important in determining the level of carbon emissions in Singapore. [10]

[Total: 30]

Question 2: Can sustainable economic growth be achieved?**Table 3: Singapore, selected indicators, 2013–2018**

	2013	2014	2015	2016	2017	2018
Real GDP (US \$billion)	287	299	306	315	327	338
Total population (millions)	5.40	5.47	5.54	5.61	5.61	5.64
Unemployment rate (%)	1.9	2.0	1.9	2.1	2.2	2.1
Carbon dioxide emissions (million tonnes)	53.6	52.2	51.3	52.4	55.5	55.9

Source: Singstat, accessed 3 November 2020

Table 4: China, selected indicators, 2013–2018

	2013	2014	2015	2016	2017	2018
Real GDP (US \$billion)	9,603	10,304	11,016	11,757	12,552	13,376
Total population (millions)	1357	1364	1371	1379	1386	1393
Unemployment rate (%)	4.1	4.1	4.1	4.0	3.9	3.8
Carbon dioxide emissions (million tonnes)	9,797	9,820	9,716	9,704	9,839	10,064

Source: Statista, accessed 3 November 2020

Table 5: Human Development Index (HDI) for Singapore and China, 2018

Singapore	0.935
China	0.758

Source: United Nations (UN), accessed 3 November 2020

Extract 5: China is set to become the world's renewable energy superpower

The continuing growth in renewable energy around the world is set to boost the power of China while undermining the influence of major oil exporters such as Russia and Middle East states like Saudi Arabia, according to a new report on the changing global energy landscape. With a leading position in renewable energy output as well as in related technologies such as electric vehicles, Beijing now finds itself in an influential position that other countries may struggle to counter.

Unlike traditional fossil fuels, renewable energy sources are widely available around the world. Whether it is solar or wind power, tidal energy or hydroelectric plants, most countries have the potential to develop some clean energy themselves. This means that a country that currently has to import most of its energy such as oil will in the future be able to generate its own power – this could help with issues related to its balance of trade deficit and inflation, especially if global oil prices are soaring. An additional benefit is that employment in clean energy industries will likely increase.

While the changes promise to democratise the provision of energy, not all countries will fare equally well in the new landscape. China has taken a lead in renewable energy and is now the world's largest producer, exporter and installer of solar panels, wind turbines, batteries and electric vehicles. China also has a clear lead in terms of the underlying technology, with well over 150,000 renewable energy patents as of 2016, 29% of the global total. The next closest country is the United States (US), which had a little over 100,000 patents, with Japan and the European Union (EU) having closer to 75,000 patents each. Patent figures give an

indication of how much investment different countries have been putting into the industry. By contrast, major oil exporters such as Russia and Indonesia had negligible numbers of renewable energy patents.

Beyond China, there are a few other groups of countries that stand to gain from the trends now under way. They include countries with high potential for renewable energy generation, such as Australia and Chile, which could become significant exporters of renewable electricity. Mineral-rich countries such as Bolivia and Mongolia could also tap into rising global demand for their raw materials.

There are great dangers for other countries though. In particular, there is the potential for political instability in oil-exporting countries that find their revenues drying up. Russia and Middle East states are most exposed to a reduction in fossil fuel revenues. On average, these regions have net fossil fuel exports of more than a quarter of their gross domestic product (GDP). "Declining export revenues from oil will adversely affect their economic growth prospects and national budgets," the report says. "To prevent economic disruption, they will need to adapt their economies and reduce their dependence on fossil fuels."

Many of these governments are well aware of the risks they face and have been making significant investments into renewable energy in recent years. For example, the United Arab Emirates (UAE) has developed vast solar energy parks and Saudi Arabia recently unveiled plans to develop 59 gigawatts (GW) of renewable energy by 2030. However, while these will provide a useful source of energy in the future, they will not do anything to replace the loss of income if oil and gas demand slumps around the world. Despite launching many economic diversification programmes, governments in the Gulf in particular have yet to find a way to break their dependency on oil revenues.

Source: Dominic Dudley, *Forbes*, 11 January 2019

Extract 6: Time to end our fixation with GDP and growth

Since the mid-20th century, economic growth has taken on a dominant position in the way practically every country arranges its affairs and priorities. Growth has become shorthand for increasing living standards. It often means more people at work and more companies in business. Its opposite, recession, normally means bankruptcies and redundancies. Thus, growth has become a 'holy grail' for governments seeking re-election.

However, some people have benefited more from growth than others, despite global GDP growing by more than 5,000% since the 1960s. Inequality has boomed in advanced economies since the 1970s, while the mounting risk of catastrophic global warming raises serious questions about the links between growth and carbon emissions. Besides, there are other inherent limitations to GDP. It includes rough estimates for the value of drugs and prostitution, yet fails to take account of unpaid work in the home. Environmental degradation is not included in GDP. Many economists thus argue that GDP is incapable of connecting the economy with social and environmental outcomes that determine our well-being and the sustainability of the planet. Should we wish to move away from measuring our success on monetary terms alone, GDP would be inadequate.

Some economists advocate for green 'decoupled' growth – achieving growth in environmentally sustainable ways, thereby limiting carbon emissions. However, Kate Raworth, an economist at the University of Oxford, says that despite advances in green technologies, growth is not 'decoupling' from carbon fast enough. The concept of 'deliberate degrowth' is promoted by some more radical economists, calling for a focus on well-being and pushing for a reduction of production and consumption in developed nations. A focus on sufficiency is needed, rather than relying on the ability of technology and productivity gains to solve ecological problems. At its core, the movement argues that economic growth is typically unjust, unsustainable for the environment and that there never can be such thing as 'enough'.

New Zealand has become the world's first major nation to unveil a budget focused on improving social well-being such as rolling out a record NZ\$1.9 billion Mental Health package, while Gus O'Donnell, the former head of the civil service in the United Kingdom (UK), is urging Britain to look beyond national income statistics like GDP data and instead focus on social well-being. However, moving entirely away from GDP could be tricky. Government debt is always measured in relation to the size of the economy, to assess how sustainable

national finances are. Without such a benchmark, it could become harder for countries to finance their activities.

With growing numbers of alternative metrics being made available, the question is how they could be used better alongside GDP. Alfie Stirling, an economist, says: "Let's have a culture of not relying on reducing outcomes to a single metric. Our critique of GDP is that it itself is only one metric. The solution is not to find one better metric, it is just to use more metrics."

Source: Adapted from Richard Partington, *The Guardian*, 17 June 2019

Extract 7: Ensuring sustainable economic growth for Singapore

Beyond the next decade, Singapore must plan for climate change, which threatens our very existence. As a low-lying island nation, there is nowhere to hide when sea levels rise. Other small island nations like the Maldives are already facing the risk of flooding, with severe implications. The Climate Action Plan launched in 2016 sets out the strategy for mitigating and adapting to the impacts of climate change, especially on our infrastructure. To protect Singapore against climate change and rising sea levels, the government will have to invest more. Together with existing infrastructure needs, the total bill for infrastructure will increase significantly. It is very difficult to project spending needs way into the future, but the different ministries have done some preliminary estimates. The government will continue to develop fiscal plans well in advance, and put in place the right approach to finance such long-lived major infrastructure. The aim is that our economic growth is not only sustained, but also sustainable.

Tackling climate change requires global cooperation. Singapore is committed to doing her part. It is the responsible thing to do for Singapore's future generations. The carbon tax will be applied on producers for this year's emissions. This is an important signal to companies and households to adopt energy-efficient practices. It is possible for businesses to thrive without inflicting adverse consequences on the environment.

The Zero Waste Masterplan will be launched this year, which will look at better management of food waste, packaging waste and discarded electronic devices. Sustainable economic growth includes building a more sustainable environment, which makes our quality of life better, and also creates economic opportunities, such as new jobs. With regard to closing the waste loop, there are already start-ups tackling this challenge. Companies have been working on innovative ways to convert food-related waste into useful products. These are good examples of opportunities in Singapore's zero waste movement.

Buildings can also be designed to be environmentally friendly, for example, by being energy efficient and producing enough renewable energy to run itself. The Building and Construction Authority (BCA) was the first to furnish its academy in 2009, making it the first net-zero energy building in South-East Asia. Such an initiative contributes towards making our environment more sustainable and pleasant. The National Research Foundation will continue to fund research and innovation in Urban Solutions and Sustainability. There is a lot of potential for further growth in the renewable energy markets.

Source: Adapted from *Singapore Budget 2019*, 18 February 2019

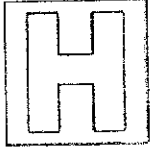
Questions

- (a) With reference to Table 3 and Table 4, compare the unemployment rate in Singapore and the unemployment rate in China over the period 2013–2018. [2]
- (b) (i) With reference to Table 5, state what can be inferred about standard of living from the difference in the values of the Human Development Index (HDI) between Singapore and China. [1]
- (ii) With the aid of Table 3 and Table 4, explain **one** factor for your inference. [2]
- (c) Explain the likely impact of an increase in the number of renewable energy patents acquired by an existing firm on its profits in the renewable energy industry. [3]
- (d) Explain how a country's successful development of renewable energy sources 'could help with issues related to its balance of trade deficit and inflation' (Extract 5). [4]
- (e) Discuss the view that countries should 'look beyond national income statistics like GDP data' (Extract 6) in measuring living standards. [8]
- (f) Discuss the assertion that countries will never achieve sustainable economic growth. [10]

[Total: 30]

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NATIONAL JUNIOR COLLEGE
SH2 Preliminary Examinations for General Certificate of Education Advanced Level
Higher 2

ECONOMICS

Paper 2

9757/02

23 August 2021

2 hours 15 minutes

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Question set on the Common Last Topic of the syllabus do not form part of the assessment. They will not be marked by the Examiners.

Do **not** answer the following question:

Question 6 (Section B) on Page 3

Turn to this question and cross it out by drawing a line through this question.

The total time allowed for this Question Paper has **not** been changed.

The total mark for this Question Paper is still **75**.

This document consists of 1 printed page.



NATIONAL JUNIOR COLLEGE
SH2 Preliminary Examinations for General Certificate of Education Advanced Level
Higher 2

ECONOMICS

Paper 2 Essays

9757/02

23 August 2021

2 hour 15 minutes

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

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

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

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

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



NATIONAL JUNIOR COLLEGE
Economics Department

Answer **three** questions in total.

Section A

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

- 1 More Singapore food and beverage (F&B) businesses are now offering island wide delivery services. At the same time, online food delivery platforms are expanding choices and convenience.
- Assess the impacts of these changes on the market for delivered F&B and its related markets. [25]
- 2 Luxury seafood restaurant chain Jumbo Group saw net profit rise to S\$11.7 million for the year 2019. On the other hand, Mr Ng, a fishball noodle hawker stallholder, disclosed that his net profit from selling a bowl of noodles at S\$3 was around 30 cents.
- (a) Explain how the different features of market structure determine the different levels of profits between a luxury seafood restaurant chain such as Jumbo Group and a hawker stall such as a fishball noodle seller. [10]
- (b) Discuss how the strategies adopted by a luxury seafood restaurant chain to increase its profits might differ from those of a hawker stall. [15]
- 3 All residents in the United Kingdom (UK) are automatically entitled to free public healthcare through the National Health Service. On the other hand, Singapore adopts a universal healthcare coverage through a mixed financing system with individual payments and subsidies from the government.
- (a) Explain why a government intervenes in the market for healthcare. [10]
- (b) Assess the economic case for the different approaches between the UK and Singapore governments in their healthcare markets. [15]

Section B

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

- 4 (a) Explain the possible causes of stagflation and why stagflation is undesirable for an economy. [10]
(b) Assess the extent to which conflict in macroeconomic goals is the main factor affecting the choice of policies by a government to address stagflation in an economy. [15]
- 5 Singapore has overtaken the United States to become the world's most competitive economy. The city-state performed well in terms of macroeconomic stability and its labour market. Its strong macroeconomic performance places it among the most successful economies in the world.

Adapted from: *Forbes*, 14 October 2019

- (a) Explain the link between the labour market and macroeconomic stability of a country. [10]
(b) Discuss the economic policies that might have resulted in Singapore achieving a strong macroeconomic performance. [15]
- 6 The United States-China trade war has entered a dangerous new phase. Tariffs are up and there is the threat of more to come. At this point, it looks likely that the trade war will be long, messy and expensive.

Source: *Bloomberg*, 28 May 2019

- (a) Explain how protectionistic measures would affect trade. [10]
(b) Discuss the extent to which protectionism would be beneficial to an economy. [15]

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National Junior College Economics Department

Preliminary Examinations 2021 Answer Booklet

**Senior High 2
H2 Economics**
(Syllabus 9757)

Examiners' Report for 2021 SH2 H2 Preliminary Examinations

Paper 1 – Case Study Question 1

Questions & Suggested Answers

(a)	<p>With reference to Table 1: (i) State the difference between the change in average electricity tariffs in Singapore and the change in average household electricity consumption in Singapore between 2015 and 2018.</p>	[1]
	<p>1m to be awarded for stating the most significant difference:</p> <ul style="list-style-type: none"> • Average electricity tariffs in Singapore has generally increased while average household electricity consumption in Singapore has generally decreased between 2015 and 2018. 	
	<p>With reference to Table 1: (ii) Calculate the value of the price elasticity of demand for electricity in Singapore in 2018 and explain one factor that could lead to this value.</p>	[3]
	<p>1m to be awarded for an accurate calculation of the price elasticity of demand for electricity in Singapore in 2018:</p> <ul style="list-style-type: none"> • $PE_{\text{electricity}2018} = \frac{\text{Percentage change in quantity demanded of electricity in 2018}}{\text{Percentage change in electric tariff in 2018}}$ = - 5.13 / 10.63 = - 0.48 <p>1m to be awarded for identifying an appropriate determinant of price inelastic demand AND 1m to be awarded for an clear and accurate explanation of why electricity has a high degree of necessity.</p> <ul style="list-style-type: none"> • In Singapore, the demand for electricity is price inelastic because electricity has a high degree of necessity as electricity is needed to power most if not all household appliances, all machines in factories, etc in Singapore. 	
(b)	<p>With reference to Table 2 and Extract 1, explain one reason for the change in average electricity tariffs in Singapore between 2015 and 2018.</p>	[3]
	<p>1m to be awarded for a clear and accurate explanation of how the increase in import price of natural gas between 2015 and 2018 affects the supply of electricity AND 1m to be awarded for the use of evidence from Table 2 and Extract 1.</p> <ul style="list-style-type: none"> • Natural gas is a factor of production to generate electricity. Extract 1 states that 95% of Singapore's electricity is generated from natural gas. • There was a general increase in the import price of natural gas (Table 2) from S\$3.59 per million metric British thermal units to S\$4.27 per million metric British thermal units between 2015 and 2018 (Table 2). Singapore imports natural gas to generate electricity as suggested in Extract 1 (i.e. process starts with the import of the source of electricity generation – mainly natural gas) and the price of natural gas takes up a large proportion (i.e. 73%) of the cost of generating electricity (Extract 1). • Therefore, the increase in import price of natural gas would increase the cost of producing electricity in Singapore. • With higher cost of production, supply of electricity would decrease. <p>1m to be awarded for a clear and accurate explanation of how the decrease in supply of electricity would affect average electricity tariffs in Singapore between 2015 and 2018.</p> <ul style="list-style-type: none"> • The decrease in supply while assuming demand is constant would result in a shortage thus an upward pressure on electricity tariff. • Therefore, average electricity tariffs in Singapore has generally increased. 	
(c)	<p>With reference to Extract 1 and using a diagram, compare the supply curves of natural gas for Singapore in May 2013 and January 2019, and explain any changes that have occurred.</p>	[5]
	<p>1m to be awarded for stating that supply has increase.</p> <ul style="list-style-type: none"> • Supply of natural gas in Singapore has increased. 	

1m to be awarded for a clear and accurate explanation of why the supply of natural gas has increased.

- This is because there was an increase in supply of natural gas in Singapore due to the commencement of the natural gas (LNG) terminal with a regasification facility (Extract 1).

1m for stating that the supply curve has become more price elastic.

- The supply curve of natural gas has also become relatively more price elastic.

1m to be awarded for a clear and accurate explanation of why the supply of natural gas has become more price elastic. The use of PES determinant is required. Evidence from Extract 1 is required.

- This is because of the increase in storage capacity from two storage tanks to four storage tanks (Extract 1) AND/OR regasification ability by having additional regasification facilities (Extract 1). Thus, throughput capacity increased from 3.5 Mtpa to 11 Mtpa (Extract 1).
- Therefore, PES value increases.

1m to be awarded for a well-labelled and well-referred to diagram that is accurate..

- As illustrated in Diagram 1, the supply curve has shifted to the right in a pivoted manner from S_0 to S_1 .

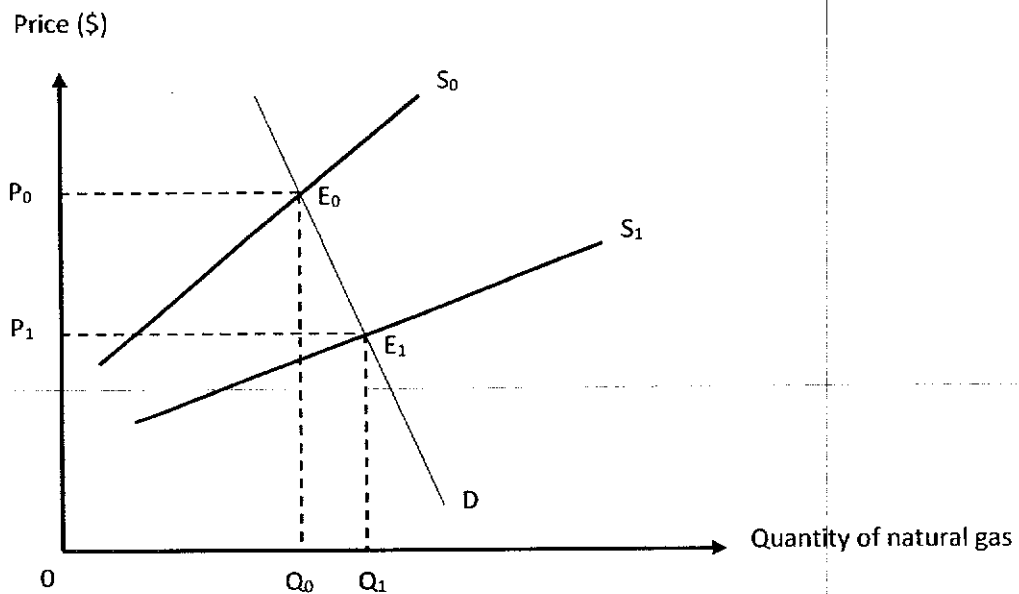


Diagram 1: Supply of natural gas in Singapore

(d) In the pursuit of allocative efficiency, discuss whether the implementation of a carbon tax in Singapore's electricity market can be justified. [8]

Introduction

- The primary objective of implementing the carbon tax is to reduce allocative inefficiency arising from the over-generation of electricity generated from natural gas in order to achieve allocative efficiency.
- However, the implementation of the carbon tax would have negative unintended consequences.

Body 1: (Thesis) Explain the reduction in allocative inefficiency as a positive effect arising from the implementing a carbon tax in Singapore's electricity market.

- The generation of electricity from natural gas has marginal private benefits (MPB) such as the revenue / electricity tariff from the sale of electricity to retailers / consumers.
- The generation of electricity from natural gas also has marginal private cost (MPC) such as fuel cost and the non-fuel cost e.g. manpower and maintenance costs (Extract 1).
- Moreover, it also imposes external costs on third parties, for example, the negative effects of global warming as the generation of electricity from natural gas does emit carbon.
- Electricity from natural gas is therefore often over-produced resulting in deadweight losses because the external costs are not internalised by the power generators thus causing a divergence between MPC and marginal social cost (MSC) by the amount marginal external cost (MEC).
- The private benefit and private cost can be illustrated by MPB and MPC curves in Diagram 1 respectively.

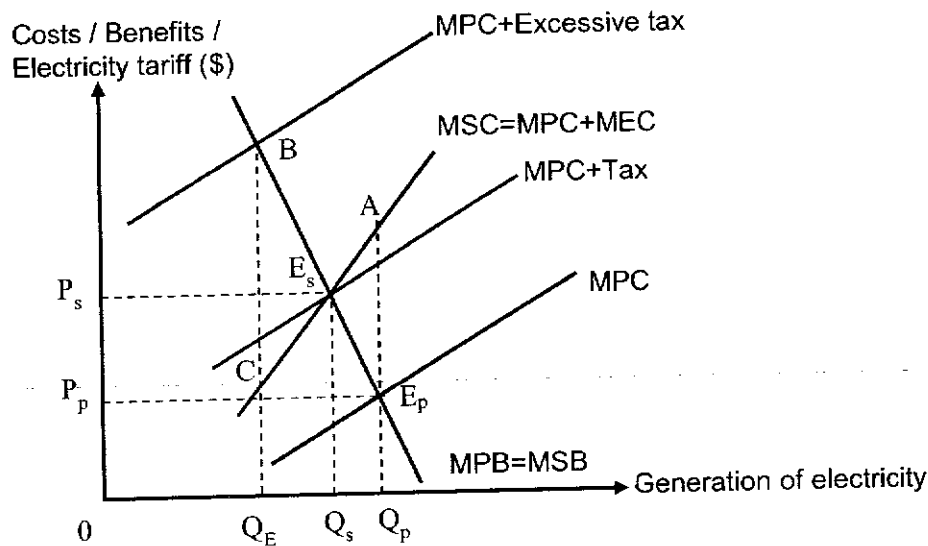


Diagram 1: Market for electricity generated from natural gas

- The free market equilibrium is achieved at E_p where $MPB=MPC$ with free market generation of electricity from natural gas at Q_p and electricity tariff at P_p .
- Social optimal is achieved at E_s where $MSC=MSB$ with generation of electricity from natural gas at Q_s and electricity tariff at P_s .
- Since $Q_p > Q_s$, there is overproduction by Q_pQ_s which in turn results in allocative inefficiency illustrated by deadweight loss (DWL) of triangle E_sAep .
- Assuming a carbon tax equivalent to marginal external cost (MEC) is imposed thus forcing power generators to internalize the external costs, marginal private cost would increase as illustrated from MPC to $MPC+Tax$.
- The implementation of carbon tax helps achieve social optimal level of electricity generated from natural gas at Q_s thus remove the DWL and achieve allocative efficiency.

Body 2: (Anti-thesis) Explain the negative unintended consequences / effects of implementing a carbon tax in Singapore's electricity market.

- The implementation of the carbon tax in Singapore's electricity market can have negative unintended consequences / effects.
- Explain any one of the pts:
 - a. The implementation of the carbon tax increases electricity tariffs in Singapore significantly as illustrated from P_p to P_s in Diagram 1 as a larger portion of the carbon tax would be passed on to

consumers in terms of higher electricity tariff given the demand for electricity is price inelastic (as explained in (a)). The implementation of the carbon tax would increase average household expenditure on electricity given that the demand for electricity is generally price inelastic. As a result, cost of living would be higher.

- b. Moreover, the higher electricity tariffs as a result of the carbon tax might lead to cost-push inflation in Singapore and thus might also reduce 'the ability of Singapore to compete internationally' (Extract 1). With cost push inflation, price competitiveness of Singapore's export is going to worsen thus Singapore's export revenue is likely to decrease. In turn, this would affect Singapore's internal stability.

Conclusion

- In conclusion, the implementation of the carbon tax in Singapore has both benefits and costs and thus the extent to which it can be justified depends on relative benefits and costs.

Mark scheme:

<p>L2 4-6 marks</p>	<p>For an answer that demonstrates knowledge and understanding and has application and analysis:</p> <ul style="list-style-type: none"> ➤ At least GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well referred to diagram(s) / Tool(s) of analysis drawn with precision (where appropriate). ➤ Evidence(s). ➤ Logical structure.
<p>L1 1-3 marks</p>	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question. ➤ INSUFFICIENT depth in economic analysis that may reflect the following: ➤ Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.
<p>E2 2 marks</p>	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ A synthesis of earlier economic arguments to arrive at relevant judgements/decisions (i.e. answer the question). ➤ Well-explained criteria-based evaluative comments supported by accurate and clear analysis to provide fairness in views. ➤ A good summative conclusion.
<p>E1 1 mark</p>	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ Relevant but unexplained evaluative judgement(s)/statement(s) i.e. evaluative judgement(s)/statement(s) not supported by analysis or ➤ A relevant conclusion.

(e) Using demand and supply analysis, discuss whether demand or supply factors in Singapore's electricity market are more important in determining the level of carbon emissions in Singapore. [10]

Introduction

- No doubt natural gas is a cleaner source for generating electricity, it is still a carbon-based fossil fuel (Extract 1) and thus the higher the equilibrium quantity electricity generated from natural gas, the higher level of carbon emissions.
- Therefore, demand and supply factors in Singapore's electricity markets that determines the equilibrium quantity of electricity are important in determining the level of carbon emissions in Singapore.

Body 1: Explain the supply factor(s) in Singapore's electricity market that are important in determining the level of carbon emissions in Singapore.

- (a) One important supply factor to consider is the price of natural gas.
- 95% of Singapore's electricity is generated from natural gas (Extract 1) and fuel costs take up 73% of the costs of generating electricity (Extract 1). The higher the price of natural gas, the higher cost of production and therefore the lower the supply of electricity generated by natural gas and thus, the higher the electricity tariff.. The higher the price of natural gas thus the lower equilibrium quantity of electricity generated from natural gas, the lower the carbon emissions, c.p.
- (b) Another important supply factor to consider is the implementation of carbon tax in Singapore.
- Carbon tax implemented in Singapore's electricity market is a form of indirect tax. Extract 2 suggests that the carbon tax is imposed on the burning of carbon-based fossil fuels. The higher the carbon tax, the lower post-tax profitability of power generators, the lower the supply and equilibrium quantity of electricity generated by natural gas, c.p. Therefore, the lower the carbon emissions.

Body 2: Explain the demand factor(s) in Singapore's electricity market that are important in determining the level of carbon emissions in Singapore.

One important demand factor to consider is the use of air conditioners.

- Electricity is needed to power air conditioners and Extract 4 suggests that air conditioners are extremely electricity-hungry appliances. Moreover, Extract 1 suggests that Singapore is having rapid (economic) growth and Extract 4 suggests that air conditioning is more of a necessity in warm countries like Singapore. This means that given the warm weather in Singapore, households' taste and preference would change towards using air conditioners more often and thus the demand for electricity would increase.
 - The feedback loop mentioned in Extract 1 would further suggest that the increase in demand for electricity would be long term thus contributing to significant effect on carbon emission in Singapore over time.
- (a) Another important demand factor to consider is technological advancement in energy saving appliances.
- Technological advancement in energy saving appliances, for example air conditioners, could lead to lower usage of electricity with same frequency of appliances usage thus as less electricity is consumed per unit of usage time. With the increased efficiency (the demand for electricity would decrease thus equilibrium quantity would decrease, c.p.

Conclusion:

- In conclusion, there are many demand and supply factors in Singapore's electricity market that determines the level of carbon emissions in Singapore. The success of UK in decarbonizing its economy (Extract 3) through the use of renewable energy (which is a supply factor) and increased energy efficiency (which is a demand factor) suggests that both demand and supply factors are important.

Mark scheme:

L2
5-7
marks

For an answer that demonstrates knowledge and understanding and has application and analysis:

- At least GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and

	<p>factors. MOST points chosen should be of relevance and significance in answering the question.</p> <ul style="list-style-type: none"> ➤ At least GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well referred to diagram(s) / Tool(s) of analysis drawn with precision (where appropriate). ➤ Evidence(s) or contextualised examples. ➤ Logical structure.
L1 1-4 marks	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <ul style="list-style-type: none"> • INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question. • INSUFFICIENT depth in economic analysis that may reflect the following: <ul style="list-style-type: none"> ✓ Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.
E2 2-3 marks	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ A synthesis of earlier economic arguments to arrive at relevant judgements/decisions (i.e. answers the question). ➤ Well-explained criteria-based evaluative comments supported by accurate and clear analysis to provide fairness in views. ➤ A good summative conclusion.
E1 1 mark	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ Relevant but unexplained evaluative judgement(s)/statement(s) i.e. evaluative judgement(s)/statement(s) not supported by analysis or ➤ A relevant conclusion.

Paper 1 – Case Study Question 2

Questions & Suggested Answers

(a)	With reference to Table 3 and Table 4, compare the unemployment rate in Singapore and the unemployment rate in China over the period 2013–2018.	[2]
	<p>1m to be awarded for stating the most significant difference:</p> <ul style="list-style-type: none"> • Over the period 2013–2018, China's unemployment rate was consistently/always higher than Singapore's unemployment rate. [1] • Singapore's unemployment rate rose <i>but</i> China's unemployment rate fell. [1] 	
(b)	(i) With reference to Table 5, state what can be inferred about standard of living from the difference in the values of the Human Development Index (HDI) between Singapore and China.	[1]
	<ul style="list-style-type: none"> • Singapore's standard of living (SOL) was higher than China's in 2018. [1] 	
(b)	(ii) With the aid of Table 3 and Table 4, explain one factor for your inference.	[2]
	<ul style="list-style-type: none"> • Using information from Tables 3 and 4, one can see that in 2018, Singapore's real GDP per capita was higher than China's real GDP per capita. [1] • This means that the average resident in Singapore had higher purchasing power and could consume a higher quantity of goods and services, and hence had higher material SOL than China. [1] 	
(c)	Explain the likely impact of an increase in the number of renewable energy patents acquired by an existing firm on its profits in the renewable energy industry.	[3]
	<ul style="list-style-type: none"> • A renewable energy patent is a legal barrier to entry that prevents other firms to compete revenue away from the given firm OR this prevents new firms from entering the market. [1] • With the increase in the number of renewable energy patents, there will be a smaller number of firms in the market, thus the given firm's average revenue (AR) or demand for renewable energy rises. [1] • Since profits = total revenue – total cost, P (AR) and Q increase, TR increases, assuming TC rising from patent acquisition is less than the rise in TR, the firm's profits will rise. [1] 	
(d)	Explain how a country's successful development of renewable energy sources 'could help with issues related to its balance of trade deficit and inflation' (Extract 5).	[4]
	<p>ON BALANCE OF TRADE:</p> <ul style="list-style-type: none"> • Extract 5 states that 'a country that currently has to import most of its energy such as oil will in the future be able to generate its own power'. Given that renewable energy sources and non-renewable energy sources are substitutes in consumption, the successful development of a (close) substitute in consumption means that the country will switch away from spending on imported non-renewable energy sources. [1] Import expenditure (M) falls and hence, ceteris paribus, balance of trade improves. [1] <p>ON INFLATION:</p> <ul style="list-style-type: none"> • A country that is dependent on imported oil might suffer from cost-push imported inflation, especially if global oil prices are soaring as oil constitutes costs of production in the economy. [1] • Therefore, the successful development of renewable energy sources means that there is less need to import oil. Even if oil prices rise, the extent of the fall in SRAS is mitigated, thus general price level remains relatively stable OR imported inflation is reduced. [1] 	
(e)	Discuss the view that countries should 'look beyond national income statistics like GDP data' (Extract 6) in measuring living standards.	[8]

Introduction

- National income statistics are economic indicators, and there are other economic and social indicators that are also useful in measuring SOL.
- Countries may need to 'look beyond national income statistics like GDP data and instead focus on social well-being' (Extract 6), as other social indicators might be more useful.

Anti-Thesis: Countries should not look beyond national income statistics like GDP data, and should focus on these, in measuring SOL.

- National income statistics include real/nominal GDP, GNI and their associated per capita figures, etc.
- GDP may be defined as the monetary value of national output produced within the geographical boundaries of a country over a 12-month period.
- The use of GDP data, specifically, real GDP per capita, gives quite a good indication of the level of production of goods and the incomes generated from it. The higher it is, the greater the purchasing power of households to spend more on the consumption of goods and services, thereby improving the material aspects of SOL.

Thesis 1: Countries should look beyond national income statistics in measuring SOL as there are other economic indicators that are also useful.

- Other economic indicators should be used in conjunction with GDP, such as Gini coefficient, government debt, unemployment rate, etc.
- According to Extract 6, income inequality 'has boomed in advanced economies since the 1970s'. Therefore, the use of other economic indicators like the Gini coefficient will be helpful in elucidating information on whether the average resident enjoys a higher material SOL. Even if GDP were to rise, a rising Gini coefficient could be indicative of minority rich benefitting from economic growth. Therefore, there is a need to look beyond national income statistics and use income inequality indicators to assess whether the average resident is experiencing a higher material SOL.

Thesis 2: Countries should look beyond national income statistics in measuring SOL as there are social and/or environmental indicators that are also useful.

- HDI values, such as those presented in Table 5, are not calculated only based on GDP. HDI is a composite index made up of three elements: an index for life expectancy, an index for school enrolment and adult literacy, and an index for real GDP/GNI per capita.
- Life expectancy and mean years of schooling are important social indicators. A higher life expectancy can mean a healthier population. These help to raise the quality of life of households, thereby improving the non-material aspects of SOL.

Synthesis

- In conclusion, whether or not countries should look beyond national income statistics in measuring SOL depends on the stage of development of the economy and what is principally stimulating GDP growth.

Mark scheme:

<p>L2 4-6 marks</p>	<p>For an answer that demonstrates knowledge and understanding and has application and analysis:</p> <ul style="list-style-type: none"> ➤ At least GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well referred to diagram(s) / Tool(s) of analysis drawn with precision (where appropriate). ➤ Evidence(s). ➤ Logical structure.
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L1 1-3 marks	For an answer that demonstrates knowledge but lacks understanding, application and analysis: <ul style="list-style-type: none"> ➤ INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question. ➤ INSUFFICIENT depth in economic analysis that may reflect the following: ➤ Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.
E2 2 marks	For an evaluation that contains <ul style="list-style-type: none"> ➤ A synthesis of earlier economic arguments to arrive at relevant judgements/decisions (i.e. answer the question). ➤ Well-explained criteria-based evaluative comments supported by accurate and clear analysis to provide fairness in views. ➤ A good summative conclusion.
E1 1 mark	For an evaluation that contains <ul style="list-style-type: none"> ➤ Relevant but unexplained evaluative judgement(s)/statement(s) i.e. evaluative judgement(s)/statement(s) not supported by analysis or ➤ A relevant conclusion.

(f) **Discuss the assertion that countries will never achieve sustainable economic growth.** [10]

Introduction

- According to Extract 6, some economists seem to think that ‘decoupled growth’ is not happening, or not happening fast enough, thus sustainable economic growth may not be attainable. Moreover, ‘deliberate degrowth’ may lead to negative growth, thus if it occurs, sustained, and hence sustainable, growth is difficult to achieve.
- However, there is still some hope if, for example, countries implement appropriate macroeconomic policies to try to achieve sustainable economic growth.

Thesis 1: Countries may not be able to achieve sustainable economic growth, if there is no sustained growth in the first place.

- Extract 5 states that, for oil-exporting countries, ‘[d]eclining export revenues from oil will adversely affect their economic growth prospects’.
- The effects may be illustrated diagrammatically as follows:

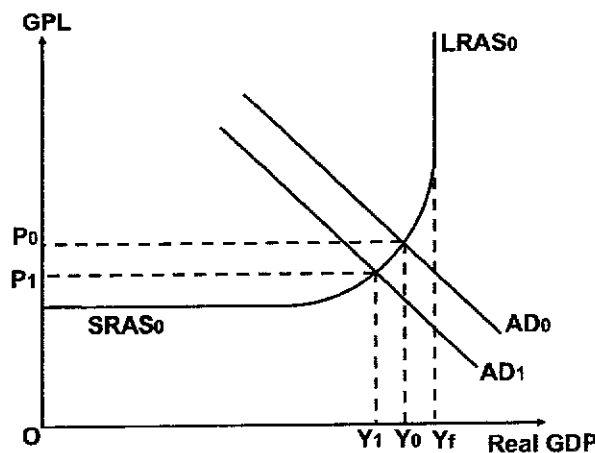


Figure 1: AD/AS diagram: a country that has falling X and hence AD

- Since $AD = C + I + G + X - M$, if X falls, ceteris paribus, AD falls, as shown above, where AD_0 shifts leftwards to AD_1 . Here, a fall in autonomous X leads to a more than proportionate fall in national

income via the reverse multiplier process, which is based on the proposition that a fall in expenditure leads to lower income, and lower income leads to a further fall in expenditure. In this case, real GDP falls from Y_0 to Y_1 , which indicates negative actual growth.

- Thus, the country cannot achieve sustained economic growth, and by logic, sustainable economic growth cannot be attained.

Thesis 2: Even if countries have attained sustained economic growth, it might be unsustainable.

- Other countries may be unwilling to decouple growth, and will still rely on non-renewable energy, e.g., some oil-importing countries continue to rely on oil as its main energy source for production.
- This means that even if, for instance, an oil-importing country were able to achieve a rise in AD and LRAS, thereby achieving non-inflationary growth, it is still relying heavily on non-renewable energy like oil, and thus carbon dioxide emissions remain substantial, thereby contributing to global warming, whose effects will be suffered by future generations.

Anti-Thesis 1A: Countries may be able to achieve sustainable economic growth if governments adopt appropriate macroeconomic policies.

- Extract 7 lists a few macroeconomic policies that Singapore has adopted or will implement.
- For example, Singapore will 'continue to develop fiscal plans well in advance, and put in place the right approach to finance such long-lived major infrastructure' (Extract 7). In this case, the Singapore government is going to carry out expansionary fiscal policy with a strong focus on sustainability.
- Since government expenditure (G) on infrastructure is part of AD, when G rises, ceteris paribus, AD will rise. An autonomous injection will lead to a more than proportionate rise in national income, based on the multiplier process.
- Infrastructure also increases productive capacity of the economy. As such, LRAS rises.
- The effects may be illustrated diagrammatically, as follows:

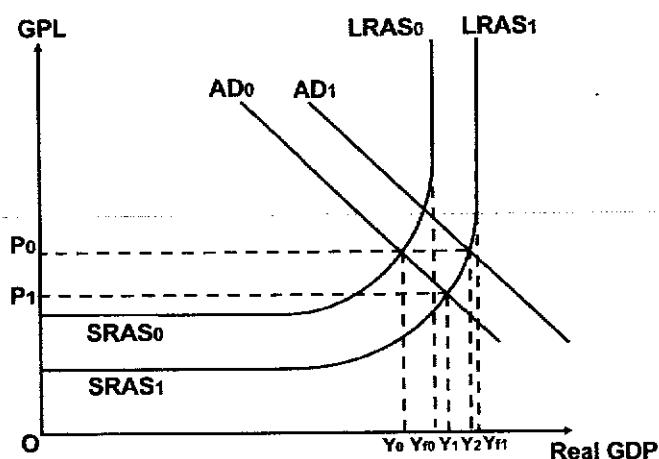


Figure 2: AD/AS diagram: Singapore achieving sustained economic growth

- Initially, AD_0 intersects AS_0 . Given that AD rises from AD_0 to AD_1 , and LRAS rises from $LRAS_0$ to $LRAS_1$, there is sustained economic growth – real GDP rises from Y_0 to Y_2 , indicating actual growth, while potential output rises from Y_0 to Y_{11} , indicating potential growth.
- Moreover, short-run AS (SRAS) also increases. With a fall in cost of production, SRAS rises, and $SRAS_0$ shifts downwards to $SRAS_1$.
- Growth is non-inflationary as the rise in AD is accompanied by a rise in AS. Hence, this occurs without causing prices to be bid up. In this case, GPL remains at P_0 .
- As mentioned, renewable energy is used for buildings to run themselves. This means it is less likely that Singapore will face significant economic problems like resource depletion. Indeed, environmental problems will be reduced for future generations, and there is a positive and stable growth rate over an extended period of time.

Anti-Thesis 1B: Countries may be able to achieve sustainable economic growth if there is development and/or discovery of more environmentally-friendly methods of production, e.g., by using newly-discovered renewable energy sources.

- According to Extract 5, some countries have the ability to develop renewable energy sources. For example, 'China has taken a lead in renewable energy and is now the world's largest producer, exporter and installer of solar panels, wind turbines, batteries and electric vehicles' (Extract 5).

- Countries that find success in the development or discovery of renewable sources of energy may be able to export it in large quantities. If X rises, ceteris paribus, AD rises, which can lead to actual economic growth.
- Moreover, when there is discovery or invention of new renewable energy technology, the economy may see significant technological advancement, and thus a rise in the productive capacity of the economy. LRAS rises, and there is potential economic growth.

Synthesis

- In conclusion, whether or not countries will achieve sustainable economic growth depends on the extent of global cooperation, the prevailing economic conditions and government budget constraints.

Mark scheme:

<p>L2 5-7 marks</p>	<p>For an answer that demonstrates knowledge and understanding and has application and analysis:</p> <ul style="list-style-type: none"> ➤ At least GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well referred to diagram(s) / Tool(s) of analysis drawn with precision (where appropriate). ➤ Evidence(s) or contextualised examples. ➤ Logical structure.
<p>L1 1-4 marks</p>	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <ul style="list-style-type: none"> • INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question. • INSUFFICIENT depth in economic analysis that may reflect the following: <ul style="list-style-type: none"> ✓ Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.
<p>E2 2-3 marks</p>	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ A synthesis of earlier economic arguments to arrive at relevant judgements/decisions (i.e. answers the question). ➤ Well-explained criteria-based evaluative comments supported by accurate and clear analysis to provide fairness in views. ➤ A good summative conclusion.
<p>E1 1 mark</p>	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ Relevant but unexplained evaluative judgement(s)/statement(s) i.e. evaluative judgement(s)/statement(s) not supported by analysis or ➤ A relevant conclusion.

Paper 2 Section A – Essay Questions

1. More Singapore food and beverage (F&B) businesses are now offering island wide delivery services. At the same time, online food delivery platforms are expanding choices and convenience.

Assess the impacts of these changes on the market for delivered F&B and its related markets. [25]

Suggested Answer:

Introduction

- Market equilibrium occurs at a price at which the quantity demanded by consumers is equal to the quantity supplied by producers.
- Supply of delivered food and beverage (F&B) has increased due to increase number of F&B firms providing delivery services, likewise demand for delivered F&B has increased because of an increased taste and preference for them.
- Related markets of delivered F&B include non-delivered F&B from hawker stalls (substitutes in consumption) and bicycles (derived demand from the demand for delivered F&B).

Body: Impact on delivered F&B market

Non-price factors of supply (Any one factor)

- Improvement in technology (Increase in Supply)
 - With the improvement in technology that make online applications (app) more accessible for F&B firms to tap on to distribute the F&B, there is an increase in the number of F&B suppliers providing delivered F&B.
 - As such, improvement in technology increases efficiency in terms of processing the food orders and having them ready for delivery, thus lowering the cost of production.
 - Hence the supply of delivered F&B increases, shifting the supply curve from S_0 to S_1 in Figure 1.

Alternatively,

- Increase in cost of production (Decrease in Supply)
 - The "very high" commission fees charged by food delivery platforms would increase the cost of production of F&B supplier, and affect their profits earned. The steep commission fees can go as high as 40 %.
 - Given that $\text{Profits} = \text{Total revenue} - \text{Total cost}$, the increase in cost of production will affect firm's profitability and they might be less willing to offer delivered F&B.
 - Hence the supply of delivered F&B might fall instead.

PED value of delivered F&B

- Demand for delivered F&B is relatively price elastic since there are many close substitutes to delivered food such as one could choose to cook at home or purchase the food from the F&B stall on their own instead of having them delivered.
- With an increase in supply, the fall in price of delivered food from P_0 to P_E will result in a more than proportionate increase in quantity demanded from Q_0 to Q_E in Figure 1.

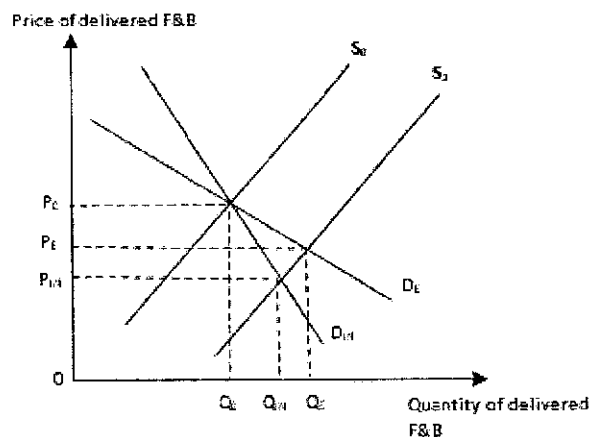


Figure 1: Market for delivered F&B

Non-price factors of demand (Any one factor)

- Changes in government policy/ economic situation (Increase in Demand)
 - The food delivery market has experienced a significant transition in the last few years especially during the COVID-19 pandemic. Governments around the world have implemented work from home or even lockdown measures, encouraging people to stay home and avoid workplaces, stores, shops, and restaurants.
 - This also has an impact on dining option in which F&B suppliers are not allowed to offer dine in option in their stores and thus consumers have to opt for either takeaways or delivery services.
 - As such, more consumers have relied on mobile apps and having their food delivered to their doorsteps.
 - Demand thus increase, shifting demand curve from D_0 to D_1 in Figure 2.

PES value of delivered F&B

- Supply of delivered F&B is relatively price elastic as F&B suppliers can easily access any mobile delivery apps to increase delivery orders for their food when there is an increase in price.
- With an increase in demand, the increase in price from P_0 to P_E in will result in a more than proportionate increase in quantity supplied from Q_0 to Q_E in Figure 2.

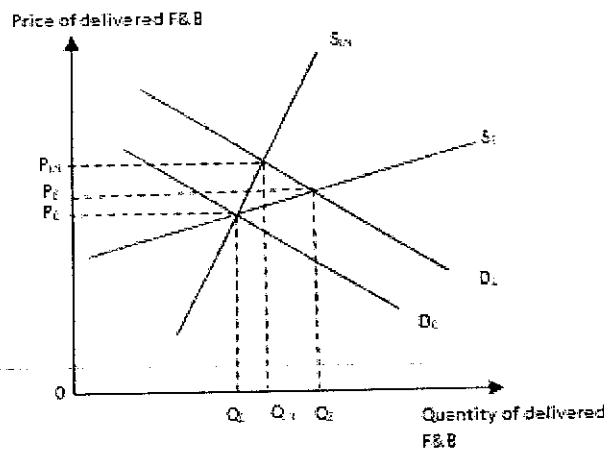


Figure 2: Market for delivered F&B

Simultaneous and extent of shifts in demand and supply

- The increase in demand and supply will shift demand curve from D_0 to D_1 and supply curve from S_0 to S_1 respectively in Figure 3.
- It is likely that the increase in demand outweighs the increase in supply for delivered F&B in recent years due to the hectic lifestyle which makes food delivery a popular trend at home as well as work. Though supply of delivered F&B increases, the increase is not as significant as the concept of food delivery is not new.
- Hence the increase in demand and supply have led to an increase in equilibrium price from P_0 to P_1 and an increase in equilibrium quantity from Q_0 to Q_1 as shown in Figure 3.

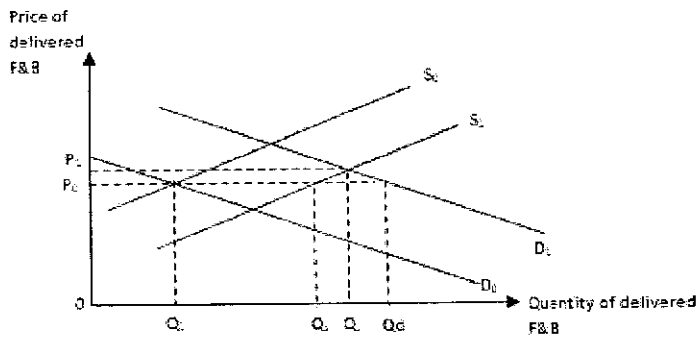


Figure 3: Market for delivered F&B

Body: Impact on related market (substitutes in consumption)

Non-delivered F&B

- Delivered F&B and non-delivered F&B are substitutes in consumption, with positive cross elasticity of demand ($XED > 0$), as both are food consumable by households.
- Given an increase in supply of delivered F&B, price of delivered F&B will fall (refer to Figure 1) and quantity demanded will increase. Demand for non-delivered F&B will fall as consumers switch to consuming delivered F&B which is cheaper. However, the extent of the fall in demand for non-delivered F&B will depend on the magnitude of XED.
- Delivered F&B and non-delivered F&B are close substitutes in consumption ($XED > 1$) since food options available for delivery via delivery platforms i.e. Grabfood, Foodpanda etc have increased.
- A fall in price of delivered F&B due to the increase in its supply will lead to a fall in demand for non-delivered F&B, shifting demand curve from D_0 to D_2 in Figure 4. Since these 2 goods are close substitutes in consumption, this will cause a more than proportionate decrease in the demand for non-delivered F&B, illustrated by a significant shift in the demand curve from D_0 to D_2 .

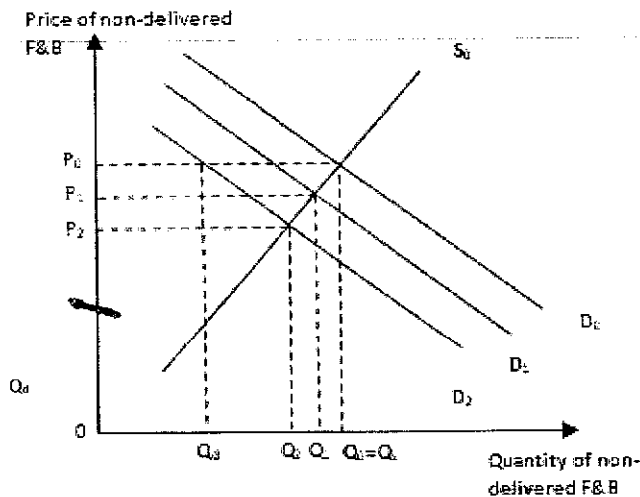


Figure 4: Market for non-delivered F&B

- Hence, the equilibrium price has fallen from P_0 to P_2 and equilibrium quantity has decreased from Q_0 to Q_2 for non-delivered F&B.

Body: Impact on related market (derived demand)

Bicycles for delivery services

- The demand for delivery vehicles i.e. bicycles is a derived demand from the demand for delivered F&B, as delivery services will require vehicles to transport the food to required destinations.

- Given an increase in demand for delivered F&B, the demand for bicycles will increase from D_0 to D_1 in Figure 5.
- Hence, the equilibrium price has increased from P_0 to P_E and equilibrium quantity has increased from Q_0 to Q_E for motorbikes.

PES value of motorbikes

- Supply of bicycles is relatively price elastic as producers can easily manufacture more bicycles and store them in the warehouse. They will then increase the quantity supplied of bicycles more than proportionately from Q_0 to Q_E once price of motorbikes increases from P_0 to P_E in Figure 5.

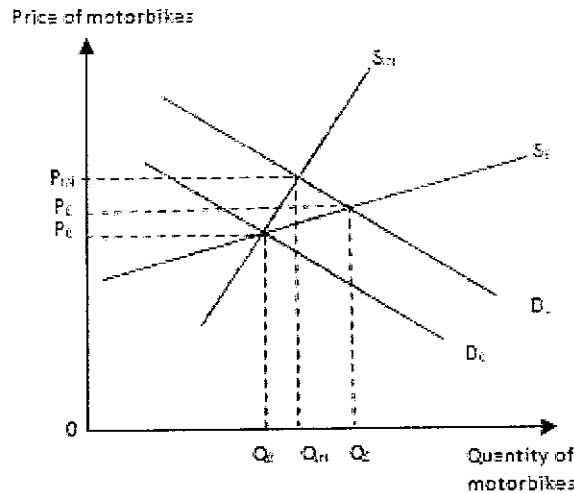


Figure 5: Market for motorbikes

Evaluative Conclusion

Ceteris paribus assumption does not hold in real world context

- In the above analysis, it is assumed that ceteris paribus assumption holds true. However, in reality, there can be other factors that affect the market for delivered food and beverage and its related markets.

Elasticity values may change over time

- Moreover, certain elasticity values may change with time. For instance, F&B stalls that do not provide delivery services may employ successful marketing strategies to promote the non-delivered F&B, i.e. giving out free dessert for every set meal purchased.

Marks Scheme

Levels	Descriptors
High L3 18 - 20	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ EXCELLENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. ➤ EXCELLENT depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well-referred to diagram(s) / tool(s) of analysis drawn with precision (where appropriate). ➤ Relevant examples and accurate use of facts. ➤ Logical structure

<p>Low L3 15 - 17</p>	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ At least VERY GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least VERY GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well-referred to diagram(s) / tool(s) of analysis drawn with precision (where appropriate). ➤ Relevant example(s) and accurate use of facts. ➤ Logical structure.
<p>High L2 12 - 14</p>	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> ➤ At least GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Diagram(s) / Tool(s) of analysis that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate). ➤ Example(s). ➤ Logical structure
<p>Low L2 9 - 11</p>	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> ➤ At least SUFFICIENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. SOME points chosen should be of relevance and significance in answering the question. ➤ At least SUFFICIENT depth in economic analysis that reflects the following in SOME explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Diagram(s) / Tool(s) of analysis that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate). ➤ Example(s). ➤ Logical structure.
<p>High L1 5 - 8</p>	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <ul style="list-style-type: none"> ✓ INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question. ➤ INSUFFICIENT depth in economic analysis that may reflect the following: <ul style="list-style-type: none"> ✓ Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.
<p>Low L1 1 - 4</p>	<ul style="list-style-type: none"> ➤ Demonstrates POOR breadth and POOR economic analysis. ➤ Is irrelevant in analysis but may contain an introduction that addresses the question or contains no economic analysis but may contain a few statements that are relevant to the concepts required to answer the question.

	<ul style="list-style-type: none"> ➤ Contains fundamental conceptual errors in analysis.
Levels	Descriptors
E3 4 - 5	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ A synthesis of earlier economic arguments to arrive at relevant judgements/decisions (i.e. answer the question). ➤ Well-explained criteria-based evaluative comments supported by accurate and clear analysis to provide fairness in views. ➤ A good summative conclusion.
E2 2 - 3	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ Relevant judgement(s)/decision(s) (i.e. answer the question) that may not follow from earlier economic arguments. ➤ Criteria-based evaluative comment(s) supported by analysis to provide fairness in views but the comment(s) may not be well-explained, may be unclear and/or may be inaccurate at times.
E1 1	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ Relevant but unexplained evaluative judgement(s)/statement(s) i.e. evaluative judgement(s)/statement(s) not supported by analysis or ➤ A relevant conclusion.

2. Luxury seafood restaurant chain Jumbo Group saw net profit rise to S\$11.7 million for the year 2019. On the other hand, Mr Ng, a fishball noodle hawker stallholder, disclosed that his net profit from selling a bowl of noodles at S\$3 was around 30 cents.
- (a) Explain how the different features of market structure determine the different levels of profits between a luxury seafood restaurant chain such as Jumbo Group and a hawker stall such as a fishball noodle seller. [10]
- (b) Discuss how the strategies adopted by a luxury seafood restaurant chain to increase its profits might differ from those of a hawker stall. [15]

Suggested answer for part (a)

Introduction

Firms in different markets can make different levels of profits due to the different market structure in which they operate. In general, there are 4 types of market structure: perfect competition, monopolistic competition, oligopoly and monopoly. The type of market structure is determined by four key characteristics, namely, the number and size of firms in the industry; the nature of the product; the ease of entry and exit of firms; and knowledge of the market. In this essay, we will look at how the different features of market structure can explain the different levels of profits earned by a luxury seafood restaurant chain and a fishball noodle hawker stall.

Body

1. Explain that the luxury seafood restaurant chain operates in an oligopolistic market while a fishball noodle hawker stall operates under monopolistic competition based on the characteristics of market structure

Number and size of firms

- The number of luxury seafood restaurants tends to be relatively small due to the higher investment or set up cost needed to operate a luxury seafood restaurant.
- Hawker stalls, on the other hand, exist in large numbers, as there can be virtually hundreds and thousands of small hawker stalls operating along the streets or in small eateries all over the country.

Entry barriers

Entry barriers in the luxury seafood restaurant business tend to be relatively higher.

Natural Barriers

- Firstly, there is the higher set up cost of renting or buying the physical space for the restaurant. A luxury restaurant typically requires more space and is usually located in a more exclusive or posh area, resulting in higher rental cost.

Artificial Barriers

- Luxury seafood restaurants also spend more on advertisements and marketing strategies to promote their brand image and gain customer loyalty.
- The market for hawker stalls has low entry barriers as it is relatively easy for anyone to set up a hawker stall by renting a small space in a coffee shop or hawker centre.

Nature of Product

- Both luxury seafood restaurants and hawker stalls sell differentiated products but the extent of differentiation may be different.
- Luxury seafood restaurants are differentiated in terms of both the quality of the food they serve as well as their service.
- Hawker stalls are somewhat differentiated as the taste and recipes used by each hawker stall may be slightly different from those of its rivals.

Knowledge of market

- There is imperfect knowledge in both the luxury seafood restaurant market as well as the market for hawker stalls, although the extent may differ.
- Consumers in the luxury seafood restaurant market tend not to know what a reasonable price for a dish on the menu should be, due to the high degree of differentiation among different restaurants.
- While imperfect knowledge may still exist in the market for hawker stalls as consumers may not know the actual quality of the hawker food before patronising the stall, the degree of imperfect knowledge is much lower.

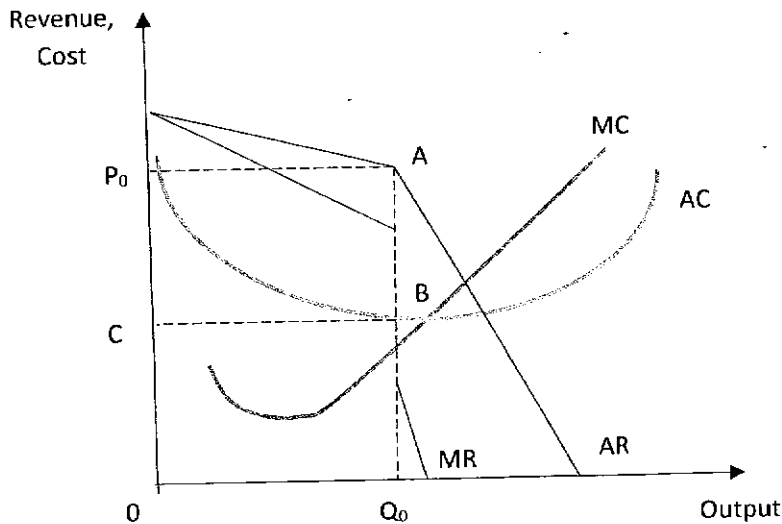
2. Explain that the different market structure allows the luxury seafood restaurant chain to earn supernormal (and thus higher level) profits while the hawker stall earns only normal (and thus lower level) profits in the long run.

2.1 Luxury seafood restaurant chain can earn supernormal profit in both short run and long run

- As the luxury seafood restaurant chain such as Jumbo Group operates in an oligopolistic market, it can earn supernormal profit in the short run and long run.

- Due to the small number of firms in the market, each firm has a significant market share, and thus its revenue is likely to be high. It will thus likely have a relatively high average revenue (AR) at its level of output. Moreover, as the firm is relatively larger in size, it is able to exploit internal economies of scale such as buying its seafood supplies in bulk, thus resulting in lower average cost. Hence the luxury seafood restaurant is able to earn supernormal profits from its high average revenue and lower average cost.
- The high entry barriers mean that the luxury seafood restaurant chain is able to continue earning supernormal profit in the long run.
- This can be shown by Fig 1 below, where it earns supernormal profit shown by the area P_0ABC .
-

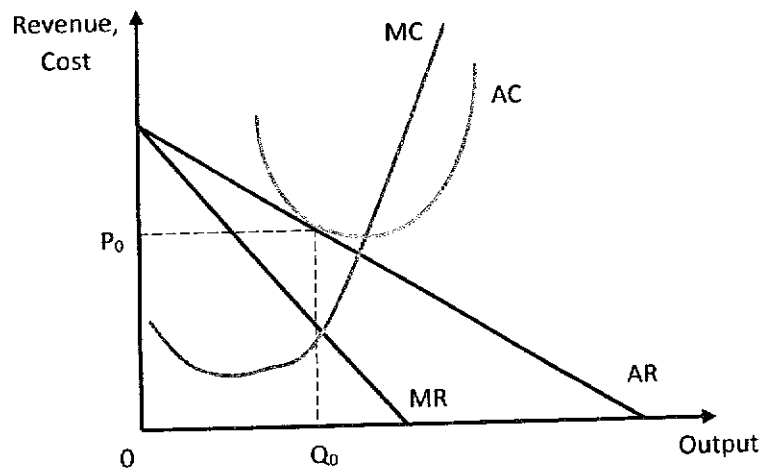
Fig 1 – Oligopolistic luxury seafood restaurant earning supernormal profit



2.2 A fishball noodle hawker stall can earn only normal profit in the long run

- As there are a large number of small hawker stalls in the market for fishball noodles, each firm has a relatively small share of the market and earns relatively lower revenue. Being small, it is unable to enjoy economies of scale and thus is unable to reduce its average cost.
- Due to limited product differentiation and lesser degree of imperfect knowledge among consumers, the hawker stalls have little monopoly power and are unable to raise price without losing significant market share.
- Even if a hawker stall is able to earn supernormal profit in the short run, it will attract more firms into the industry due to the low entry barriers. The incumbent hawker stalls will thus see a fall in their demand, causing a leftward shift of the AR curve, until the firm makes only normal profit in the long run, as shown in Fig 2.

Fig 2 – Hawker stall in monopolistic competition earning normal profit in the long run.



Conclusion

On the whole, a luxury seafood restaurant chain such as Jumbo Group is able to earn high level of profits due to its higher market power and the higher entry barriers that exist in the market. The hawkers stall such as a fishball noodle seller tends to earn low level of profits due to the high degree of competition in a monopolistic competitive market where there is little or no entry barrier and a large number of firms competing with one another.

Mark Scheme

Levels	Descriptors
<p>L3 8 - 10</p>	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ EXCELLENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. ➤ EXCELLENT depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well-referred to diagram(s) / tool(s) of analysis drawn with precision (where appropriate). ➤ Relevant examples and accurate use of facts. ➤ Logical structure.
<p>L2 5 - 7</p>	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> ➤ At least GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Diagram(s) / Tool(s) of analysis that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate). ➤ Example(s). ➤ Logical structure.
<p>High L1 3 - 4</p>	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question. ➤ INSUFFICIENT depth in economic analysis that may reflect the following: <ul style="list-style-type: none"> ✓ Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.
<p>Low L1 1 - 2</p>	<p>For an answer that:</p> <ul style="list-style-type: none"> ➤ Is irrelevant in analysis but may contain an introduction that addresses the question or contains no economic analysis but may contain a few statements that are relevant to the concepts required to answer the question. ➤ Contains fundamental conceptual errors in analysis.

- (b) Discuss how the strategies adopted by a luxury seafood restaurant chain to increase its profits might differ from those of a hawker stall. [15]

Suggested answer for part (b)

Introduction

Strategies adopted by firms to increase their profits may be categorised as price and non-price. Firms may compete by lowering their price to increase market share, or they may adopt non-price strategies such as advertising or product differentiation. The type of strategies may differ in different market structures. This is because the behaviour of firms is affected by the respective characteristics of the market structure such as the ability to set price and the interdependence among firms. A luxury seafood restaurant operating in an oligopolistic market is more likely to adopt non-price strategies. Firms in monopolistic competition such as hawker stalls may adopt both price and non-price strategies.

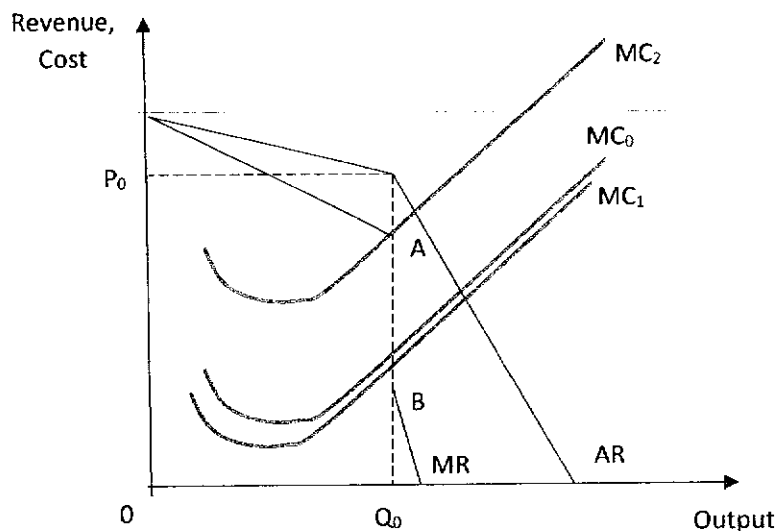
Body

Price Strategy

1. Explain that oligopolistic firms such as luxury seafood restaurants are mutually interdependent and less likely to engage in price competition

- As explained in part (a), a luxury seafood restaurant such as Jumbo Group is likely to operate in an oligopolistic market due to the relatively high entry barriers.
- Firms in an oligopoly are highly interdependent due to the small number of firms in the market, each with a significant market share.
- The mutual interdependence among the oligopolistic firms results in price rigidity. This can be explained by the kinked demand curve model as shown in Fig 3.

Fig 3 – Price rigidity of oligopolistic firm



- As shown in Fig 3, the oligopolistic firm produces at output Q_0 where $MC=MR$ and sets price at P_0 . If the firm were to raise its price above P_0 , its rivals are unlikely to follow suit so that they can win over some of the firm's customers. The firm will then lose its market share to its rivals. However, if the firm were to lower its price below P_0 , other firms are likely to follow by lowering their price in order not to lose their market share. This means that the firm will see a fall in revenue if it lowers the price. Hence the firm is unlikely to raise or lower its price, resulting in price rigidity at the prevailing price.
 - Oligopolistic firms such as luxury seafood restaurants are thus less likely to engage in price competition.
2. Explain that firms in monopolistic competition may adopt price strategies to compete with their rivals
- Under monopolistic competition, there are many small firms in the market, each with a small market share. Firms can thus act independently as their actions have little impact on other firms, since their market share is relatively small. This allows firms to adopt price competition if they wish, as the number of customers they would attract and their increase in market share will not have a significant impact on the rest of the firms.

- Since the demand facing the monopolistic competitive firm is likely to be price-elastic, lowering the price will lead to a more than proportionate increase in quantity demanded. This will thus lead to an increase in total revenue.

Non-Price Strategies

3. Explain that oligopolistic firms such as luxury seafood restaurants are more likely to adopt non-price strategies to increase profits

- Due to the price rigidity explained above, oligopolistic firms such as luxury seafood restaurants are more likely to adopt non-price strategies to increase their profits.
- Non-price strategies adopted by a luxury seafood restaurant may include

(i) Innovation

Innovation refers to the act or process of developing and introducing new ideas, products, methods or ways of doing things. Applied to the luxury seafood restaurant, it could mean coming up with new recipes and dishes that are more unique so as to attract more customers to the restaurant.

(iii) Branding

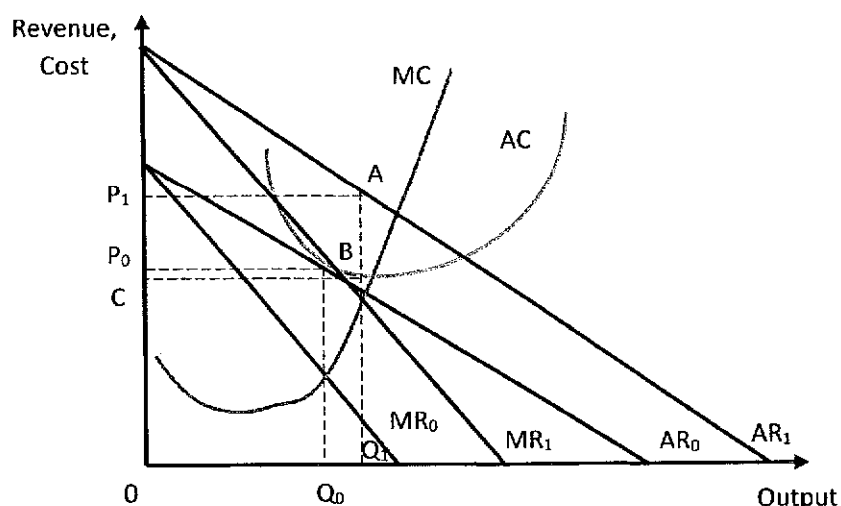
A brand refers to the sign, logo, name or label of a product or company that distinguishes it from other products or companies based on the how it is perceived by consumers. A brand has nothing to do with the actual differences in products of rival firms but has to do with the value and perceptions consumers associate with it. The Jumbo Group may promote its brand through advertising or sponsoring major events or television programmes.

- Such non-price strategies will increase demand for the firm's product. At the same time, they also make the demand curve of the firm's product more price-inelastic, thus allowing the firm to increase its price without losing significant market share.
- While non-price strategies involve increased costs, this higher cost can also form a barrier to entry for potential entrants, thus benefitting the incumbent firms.

4. Explain that firms in monopolistic competition may also adopt non-price strategies but may differ in terms of the type and scale of non-price strategies

- As firms in monopolistic competition sell differentiated products and have some degree of monopoly power, they may also engage in non-price strategies. Hawker stalls may adopt the non-price strategies such as product differentiation and advertising to increase their demand.

Fig 4 – Increase in demand of hawker stall due to non-price strategies



- After the increase in DD shown by the rightward shift of AR from AR_0 to AR_1 , the firm now makes supernormal profit of P_1ABC .
- As monopolistic competitive firms earn only normal profits in the long run, they are less able to afford to engage in R&D and innovation, unlike the oligopolistic firms. They are more likely to adopt ways to differentiate their products from their competitors.
- Due to the low level of profits earned by hawker stalls, they are also less likely to engage in branding efforts, which can be costly and unviable for the hawkers.

Evaluative Conclusion

As discussed above, the strategies adopted by a luxury seafood restaurant might differ from those of a hawker stall due to their different market structure and different size and level of profits, which determine the resources available to them. It is also noted that the non-price strategies adopted by the luxury seafood restaurant may not differ significantly from those of the hawker stall except in terms of their scale and extent.

Mark Scheme

Levels	Descriptors
L3 8 - 10	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ EXCELLENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. ➤ EXCELLENT depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well-referred to diagram(s) / tool(s) of analysis drawn with precision (where appropriate). ➤ Relevant examples and accurate use of facts. ➤ Logical structure.
L2 5 - 7	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> ➤ At least GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Diagram(s) / Tool(s) of analysis that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate). ➤ Example(s). ➤ Logical structure.
High L1 3 - 4	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question. ➤ INSUFFICIENT depth in economic analysis that may reflect the following: <ul style="list-style-type: none"> ✓ Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.
Low L1 1 - 2	<p>For an answer that:</p> <ul style="list-style-type: none"> ➤ Is irrelevant in analysis but may contain an introduction that addresses the question or contains no economic analysis but may contain a few statements that are relevant to the concepts required to answer the question. ➤ Contains fundamental conceptual errors in analysis.

Levels	Descriptors
E3 4 - 5	For an evaluation that contains

	<ul style="list-style-type: none"> ➤ A synthesis of earlier economic arguments to arrive at relevant judgements/decisions (i.e. answer the question). ➤ Well-explained criteria-based evaluative comments supported by accurate and clear analysis to provide fairness in views. ➤ A good summative conclusion.
E2 2 - 3	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ Relevant judgement(s)/decision(s) (i.e. answer the question) that may not follow from earlier economic arguments. ➤ Criteria-based evaluative comment(s) supported by analysis to provide fairness in views but the comment(s) may not be well-explained, may be unclear and/or may be inaccurate at times.
E1 1	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ Relevant but unexplained evaluative judgement(s)/statement(s) i.e. evaluative judgement(s)/statement(s) not supported by analysis or ➤ A relevant conclusion.

3. All residents in the United Kingdom (UK) are automatically entitled to free public healthcare through the National Health Service. On the other hand, Singapore adopts a universal healthcare coverage through a mixed financing system with individual payments and subsidies from the government.
- (a) Explain why a government intervenes in the market for healthcare. [10]
 (b) Assess the economic case for the different approaches between the UK and Singapore governments in their healthcare markets. [15]

Suggested answer for Part (a)

Introduction:

- Healthcare is a merit good which generates positive externalities and is deemed by the government to be socially desirable for consumption.
- When left to the free market, people will under-consume healthcare due to the presence of positive externalities and imperfect information. Thus, market failure arises and a government intervenes in the healthcare market to achieve allocative efficiency and equity.

Body:

Explain positive externality from the consumption of healthcare leading to allocative inefficiency and hence, a reason for government intervention

- In the pursuit of self-interest, individuals will only consider their own private costs and benefits and consume at $0Q_p$ units, where Marginal Private Cost (MPC) = Marginal Private Benefit (MPB).
- However, there are external benefits to society as healthcare enables individuals to become healthier and this may lead to greater labour productivity. The economy benefits from a more productive workforce as more real output is produced with a given amount of labour.
- The presence of Marginal External Benefit (MEB) creates a divergence between the MPB and marginal social benefits (MSB) where $MSB = MPB + MEB$.
- Assuming no negative externality, MPC equals to marginal social cost MSC.
- The socially optimum output level is $0Q_s$ units, where $MSB = MSC$.
- Thus, there is an under-consumption of Q_pQ_s units, leading to a deadweight loss of area ABC and allocative inefficiency.
- Thus, the free market fails and government intervention is necessary to address the allocative inefficiency in the healthcare market.

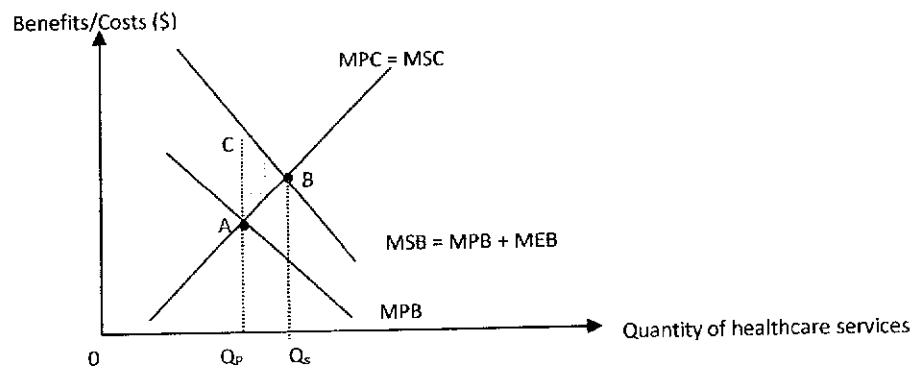


Figure 1: Market failure due to positive externalities in healthcare market

Explain imperfect information in healthcare leading to allocative inefficiency and hence, another reason for government intervention.

- If left to the free market, it is likely that healthcare will be under-consumed because individuals undervalue their private benefits from the consumption of it.
- Consumers may be unaware of the full benefits of healthcare services and underestimate the benefits that they would receive by identifying their illnesses early.

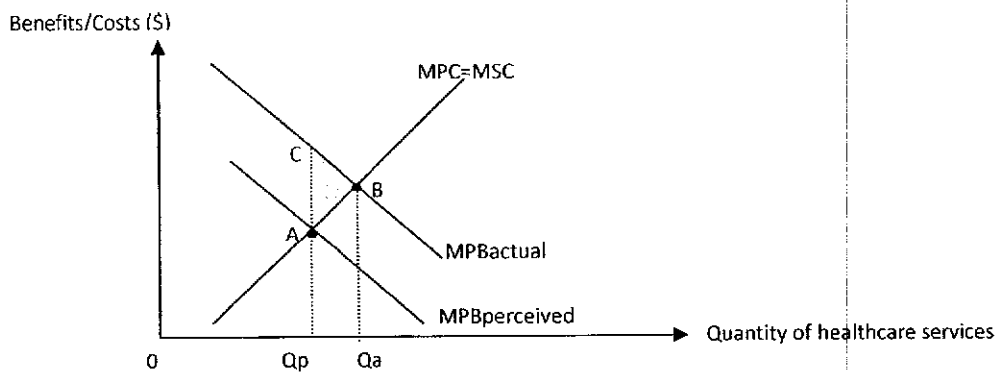


Figure 2: Market Failure due to imperfect information in healthcare market

- With reference to Figure 2, due to imperfect information, there is a divergence between MPBperceived and MPBactual. When consumers undervalue the benefits of consuming healthcare, they will consume at QP units, where MPBperceived = MPC.
- However, if the consumers have perfect knowledge, they would consume at a higher output, OQa, where MPBactual = MPC.
- Hence, with imperfect information, there will be an under-consumption of QpQa units of healthcare and a deadweight loss represented by area ABC.

Explain equity concerns in the healthcare market which is a reason for government intervention

- Equity is the fairness in the distribution of economic welfare such as the access to essential goods and services like healthcare services.
- The high price of healthcare, especially for secondary healthcare since it involves hospital bills, means that it may not be affordable to the lower income groups, resulting in greater inequity.

Conclusion:

- Hence, a government intervenes in the healthcare market to attain allocative efficiency and equity.

Mark Scheme

Levels	Descriptors
L3 8 - 10	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ EXCELLENT BREADTH that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. ➤ EXCELLENT DEPTH in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well-referred to diagram(s) / tool(s) of analysis drawn with precision (where appropriate). ➤ Relevant examples and accurate use of facts. ➤ Logical structure.
L2 5 - 7	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> ➤ At least GOOD BREADTH that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least GOOD DEPTH in economic analysis that reflects the following in MOST explanations.

	<p>✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing.</p> <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Diagram(s) / Tool(s) of analysis that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate). ➤ Example(s). ➤ Logical structure.
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Low L1 1 - 2	<p>For an answer that:</p> <ul style="list-style-type: none"> ➤ Is irrelevant in analysis but may contain an introduction that addresses the question or contains no economic analysis but may contain a few statements that are relevant to the concepts required to answer the question. ➤ Contains fundamental conceptual errors in analysis.

- (b) Assess the economic case for the different approaches between the UK and Singapore governments in their healthcare markets. [15]

Suggested answer for part (b)

Introduction:

- A government objective is to maximise society's welfare. Due to the allocative inefficiency and inequity issues present in the healthcare market as explained in (a), a government intervenes in the healthcare market to achieve allocative efficiency and equity.
- The different approaches by the UK and Singapore governments in their healthcare markets can be justified based on the different levels of perception of marginal external benefits (MEB) and the different approaches to attain equity in their healthcare markets.
- However, there are also economic arguments against the approaches adopted by the UK and Singapore governments.

Body:

Economic case for UK in providing free healthcare

- a. MEB for UK is greater than that for Singapore
 - In addition, the perceived MEB in UK may be greater than that of Singapore in the healthcare market.
 - With reference to the graph below, the socially optimum level of consumption is where $MSB=MSC$ at OQ_s units. If left to the free market, the level of consumption would be where $MPB = MPC$ at OQ_p .
 - The level of under-consumption would be Q_s minus Q_p units.
 - To achieve allocative efficiency where $MSB= MSC$ at OQ_s , this is the level where $MPB = 0$.
 - If the UK government gives free healthcare (i.e. full subsidy), the MPC curve shifts to $MPC + \text{subsidy}$. The full subsidy allows the consumers to internalise the positive externality. The level of consumption would be where $MPC + \text{full subsidy} = MPB$ which is equal to $MSB= MSC$ at OQ_s .

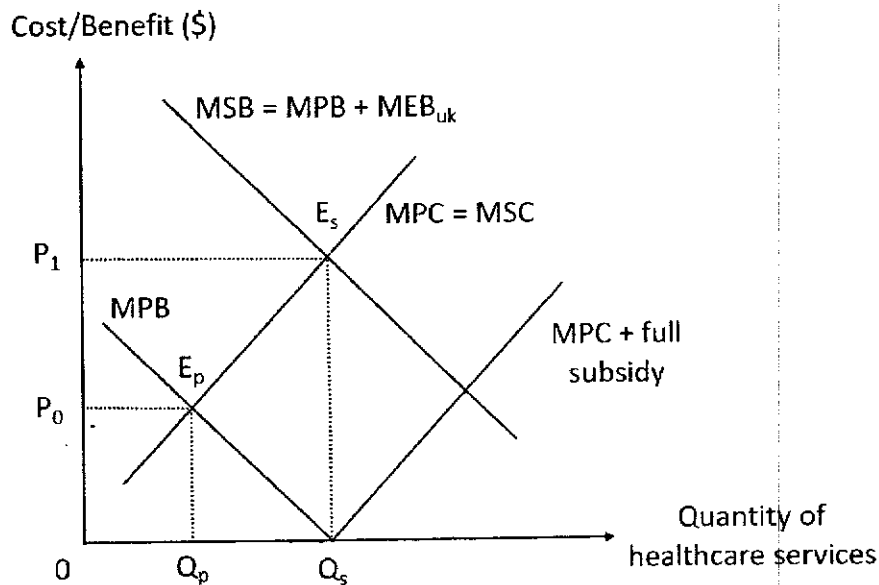


Figure 1: Free provision in the UK healthcare market

b. Equity addressed differently by the UK government

- Healthcare services provided by the National Health Service (NHS) are free of charge to all residents in UK and one of the reasons is because of equity. Providing free healthcare helps to ensure that all residents in the UK are able to access healthcare services, regardless of their income levels and ability to afford healthcare.

Economic arguments against providing free healthcare in the UK

- Greater strain on government budget position and greater national debt
 - Providing free healthcare for UK's large resident population imposes a greater strain on the UK government's budget as it has to be financed using taxpayers' monies. Assuming the UK government has no national reserves, if it runs a budget deficit due to its high expenditure on free healthcare, this adds on to its national debt and worsens it.
- High opportunity cost incurred
 - In addition, the high government funding used for free healthcare imposes a high opportunity cost. This may be in the form of foregone government expenditure on developing its infrastructure by improving its transportation network.
- Moral hazard issues due to free provision.
 - Given that NHS healthcare services are provided for free, this may partially insulate the UK residents from the full costs of healthcare services, thus resulting in possible moral hazard. UK residents may take less care of their general health in consideration of their access to free basic healthcare services or they may undertake riskier activities such as parkour. This could lead to long queues and waiting times for healthcare services which may result in a decline in healthcare standards in UK.

Economic case for Singapore in providing subsidies but not free healthcare

- MEB for Singapore is lower than that for the UK
 - As explained earlier, the MEB is lower in Singapore than the UK, therefore the deadweight loss area, E_sBC arising from free provision where $MPB=0$ at Q_f is more than the deadweight loss of no government intervention, represented by E_pAE_s . Thus, the Singapore government chooses not to provide free healthcare.
 - In order to attain the socially optimum output level at $0Q_s$ where MSC cuts MSB , the Singapore government chooses to provide an indirect subsidy that is equal to MEB_{sg} . This reduces MPC to $MPC + subsidy$ and this intersects MPB at $0Q_s$ which is allocative efficient.

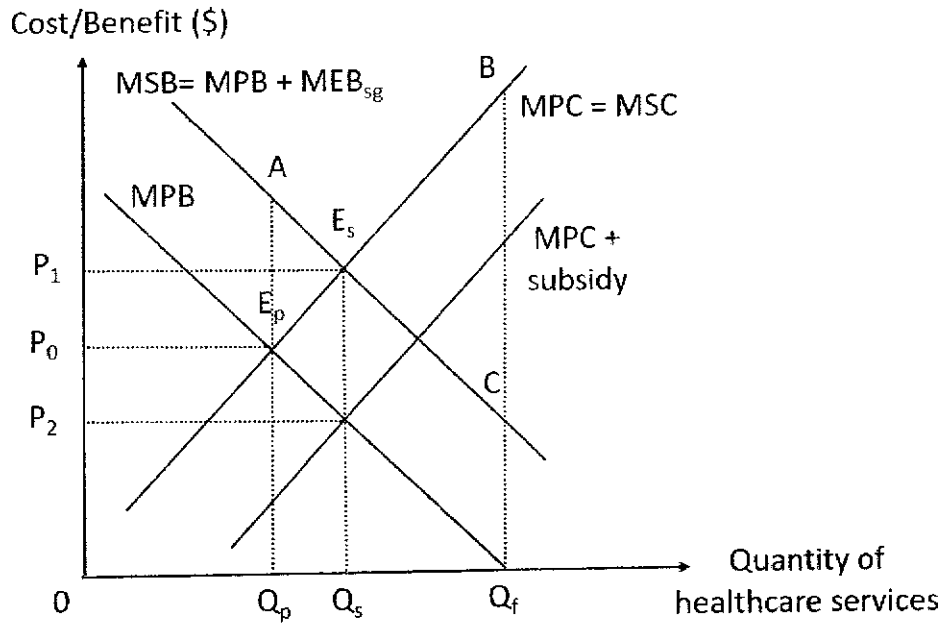


Figure 2: Partial subsidy in Singapore healthcare market

- b. Equity addressed differently by the Singapore government
 - If a low income individual is still having trouble paying for his medical bills after indirect subsidies given by the government, the government may provide even more subsidies through Medifund. This is done through means testing the lower income individual and his family.
- c. Addressing moral hazard issue that will be present if healthcare is provided for free
 - By learning from the economic argument against UK's free provision of healthcare, the Singapore government believes in the mixed financing scheme as it promotes individual responsibility and reduces the moral hazard issue.

Economic arguments against giving subsidy for Singapore

- a. Difficulty in measuring MEB which may lead to government failure
 - There are difficulties in measuring the exact value of the MEB due to imperfect information. In this context, it is difficult to place an exact monetary value on the productivity gains to an economy from a healthier workforce due to the difficulty in isolating the causality effect. Hence, the exact amount of subsidy to be given may be overestimated or underestimated.

Evaluation/Conclusion:

- The different approaches arise because of the different valuations of MEB ($MEB_{uk} > MEB_{sg}$) and the different ways to address equity. Whether the economic case is justifiable for UK or Singapore depends on the state of the government budget and the level of national debt. In addition, it also depends on the cost efficiency of administering the different approaches to achieve equity.

Mark Scheme

Levels	Descriptors
L3 8 - 10	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ EXCELLENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. ➤ EXCELLENT depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well-referred to diagram(s) / tool(s) of analysis drawn with precision (where appropriate). ➤ Relevant examples and accurate use of facts. ➤ Logical structure.

<p>L2 5 - 7</p>	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> ➤ At least GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Diagram(s) / Tool(s) of analysis that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate). ➤ Example(s). ➤ Logical structure.
<p>High L1 3 - 4</p>	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question. ➤ INSUFFICIENT depth in economic analysis that may reflect the following: <ul style="list-style-type: none"> ✓ Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.
<p>Low L1 1 - 2</p>	<p>For an answer that:</p> <ul style="list-style-type: none"> ➤ Is irrelevant in analysis but may contain an introduction that addresses the question or contains no economic analysis but may contain a few statements that are relevant to the concepts required to answer the question. ➤ Contains fundamental conceptual errors in analysis.

Levels	Descriptors
<p>E3 4 - 5</p>	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ A synthesis of earlier economic arguments to arrive at relevant judgements/decisions (i.e. answer the question). ➤ Well-explained criteria-based evaluative comments supported by accurate and clear analysis to provide fairness in views. ➤ A good summative conclusion.
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<p>E1 1</p>	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ Relevant but unexplained evaluative judgement(s)/statement(s) i.e. evaluative judgement(s)/statement(s) not supported by analysis or ➤ A relevant conclusion.

Paper 2 Section B – Essay Questions

4. (a) Explain the possible causes of stagflation and why stagflation is undesirable for an economy. [10]
(b) Assess the extent to which conflict in macroeconomic goals is the main factor affecting the choice of policies by a government to address stagflation in an economy. [15]

Suggested answer for part (a)

Introduction:

- Stagflation is defined as negative economic growth along with a rise in general price levels (inflation).
- The possible causes are due to a decrease in SRAS and/or a decrease in AS.
- Stagflation is undesirable for an economy as it brings about negative impact on an economy's macroeconomic goals, standard of living and welfare.

Body:

Explain any 2 possible cost-push causes of stagflation in an economy

- Stagflation may be caused when an economy experiences a cost-push inflation which is caused by a persistent increase in costs of production for reasons not associated with an increase in demand.

External factor

- For small and open economies that lack natural resources, for example Singapore, they are heavily dependent on imports for even the most basic of their daily necessities and for the production of their goods and services. An increase in the price of imports (for example oil and raw materials used as factor inputs) due to supply shocks in exporting countries would likely result in an increase in cost of production for import-reliant economies.

Internal factor

- An economy may also experience domestic cost push inflation that is caused by increases in wage. The presence of strong trade unions in an economy, for example France, may result in trade unions successfully negotiating wage increments for their trade union members. If the wage increments outweigh the increase in productivity of these workers, this results in a higher cost of production for firms.
- An increase in cost of production would cause a decrease in short run aggregate supply (SRAS).
- As a result, general price level would increase from P_0 to P_1 and this would result in cost-push inflation if the increase in GPL is sustained. Furthermore, firms also cut back on production and real output falls from Y_0 to Y_1 . This leads to stagflation.

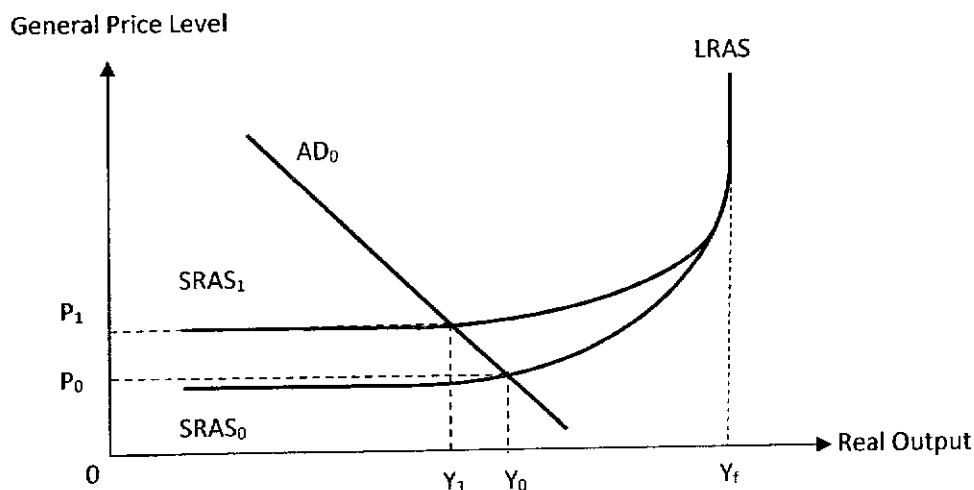


Figure 1: Cost push inflation causing stagflation

Combined undesirable effects on an economy from stagflation

- A decline in real output/income and rising prices may result in negative expectations forming in the economy by households and firms. Households may expect further decline in their wages and cut back on their expenditure, lowering consumption (C). Greater uncertainty of prices hinders businesses in planning, hence firms are likely to reduce their planned investments and this reduces investments (I). Given that $AD = C + I + \text{government spending (G)} + \text{net exports (X-M)}$, AD decreases and real output decreases even further while prices remain high. The fall in real output means that there will be a rise in cyclical unemployment as well.

- With a fall in income, this means that income per capita has decreased, assuming population size is constant. Coupled with a rise in prices, this means that purchasing power on average has decreased. This results in an average household consuming less goods and services, causing a fall in material standard of living (SOL). Furthermore, this may also force individuals, especially low-income individuals, to work longer hours resulting in lesser leisure hours, thus reducing their non-material SOL.

Summative conclusion:

- Overall, causes of stagflation can be due to internal or external reasons. In addition, stagflation is likely to cause several undesirable effects on an economy.

Mark Scheme

Levels	Descriptors
<p>L3 8 - 10</p>	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ EXCELLENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. ➤ EXCELLENT depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well-referred to diagram(s) / tool(s) of analysis drawn with precision (where appropriate). ➤ Relevant examples and accurate use of facts. ➤ Logical structure.
<p>L2 5 - 7</p>	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> ➤ At least GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Diagram(s) / Tool(s) of analysis that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate). ➤ Example(s). ➤ Logical structure.
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- (b) Assess the extent to which conflict in macroeconomic goals is the main factor affecting the choice of policies by a government to address stagflation in an economy. [15]

Suggested answer for part (b)

Introduction

- A conflict in macroeconomic goals may arise when a government considers to address one of the 2 macroeconomic issues by adopting a relevant AD management policy, thus affecting its policy choice whereby it may prefer the use of supply-side policies.
- However, there are other factors that may affect a government's policy choice when tackling stagflation which includes root cause of the stagflation, government budget and debt/reserves, and nature of the economy.

Body:

Explain how a conflict in macroeconomic goals may affect a government's policy choice in addressing stagflation

- If an economy is experiencing a decline in its real output/income and a rise in GPL due to a decline in SRAS (assuming economy is in the intermediate region), the government is unlikely to consider to adopt a contractionary AD policy to reduce the high inflation because of the trade-off that may arise.
- For example, a contractionary fiscal policy may be adopted by decreasing government expenditure and increasing taxes. The government can reduce its infrastructure spending, reducing its development expenditure and G. $AD = C + I + G + (X-M)$, thus AD decreases and shift leftwards from AD_0 to AD_1 and this reduces the general price level from P_1 to P_2 . However, at the same time, real output decreases further from Y_1 to Y_2 .
- Hence, in order to avoid this conflict, a government may instead choose to use an AS policy. The government may choose to provide partial wage subsidies to domestic firms, hence cost of production for firms decreases. This increases SRAS and shifts it downwards from $SRAS_1$ to $SRAS_0$, resulting in a fall in GPL from P_1 to P_0 and increase in real output from Y_1 to Y_0 , thus avoiding the macroeconomic conflict caused by using an AD policy.

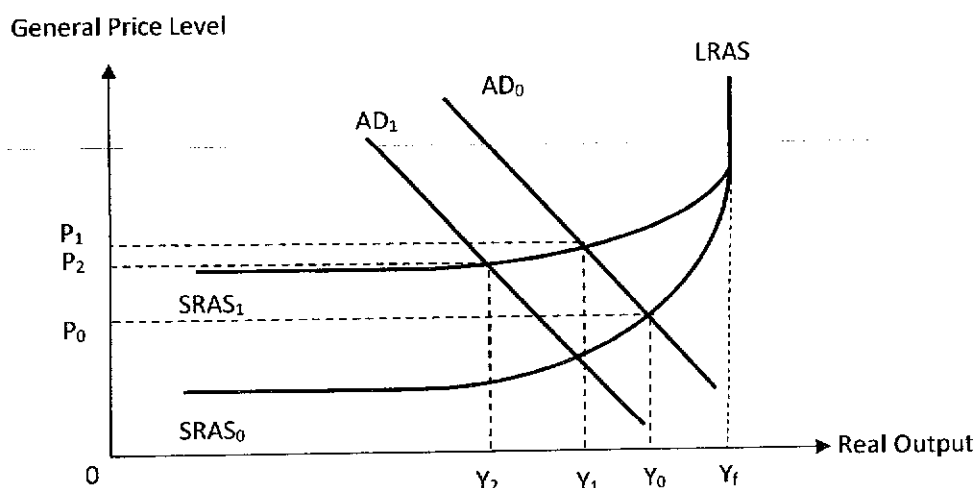


Figure 2: Conflict faced when AD management policy is used to tackle stagflation

Explain how there are other factors that may affect a government's policy choice in addressing stagflation

Root cause of the stagflation

- When attempting to tackle stagflation, a government needs to consider the root cause of the stagflation. For instance, if the stagflation was caused by imported inflation because the economy is heavily reliant on imported factor inputs, the government should choose to appreciate its currency. This increases SRAS and hence, increasing real output and reducing the general price level.

Budget position and national reserves/debt of the government

- In deciding whether to use AS policies such as wage subsidies to tackle stagflation, the government's budget position needs to be taken into consideration. If a government is already having a budget deficit and has a high level of national debt, the only way to give out wage subsidies is by borrowing more which may not be advisable.

- Thus, when faced with this constraint, a government may instead use legislation to lower the cost of production for firms to increase SRAS and tackle stagflation.

Nature of the economy

- For a small and open economy like Singapore that lacks important resources like oil, the government is likely to adopt an appreciation policy as it directly reduces the price of imported oil, reducing cost of production and increasing SRAS. This helps to tackle stagflation.

Evaluation conclusion:

- In conclusion, the extent to which a conflict in macroeconomic goals is likely to affect a government's policy choice to address stagflation is small. This is because conflicts in macroeconomics aims are avoidable when a policy or policies are used to concurrently increase real national output and reduce general price level.

Mark Scheme

Levels	Descriptors
L3 8 - 10	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ EXCELLENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. ➤ EXCELLENT depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well-referred to diagram(s) / tool(s) of analysis drawn with precision (where appropriate). ➤ Relevant examples and accurate use of facts. ➤ Logical structure.
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Levels	Descriptors
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5. Singapore has overtaken the United States to become the world's most competitive economy. The city-state performed well in terms of macroeconomic stability and its labour market. Its strong macroeconomic performance places it among the most successful economies in the world.

Adapted from: Forbes, 14 October 2019

- (a) Explain the link between the labour market and macroeconomic stability of a country. [10]
 (b) Discuss the economic policies that might have resulted in Singapore achieving a strong macroeconomic performance. [15]

Suggested answer for part (a)

Introduction

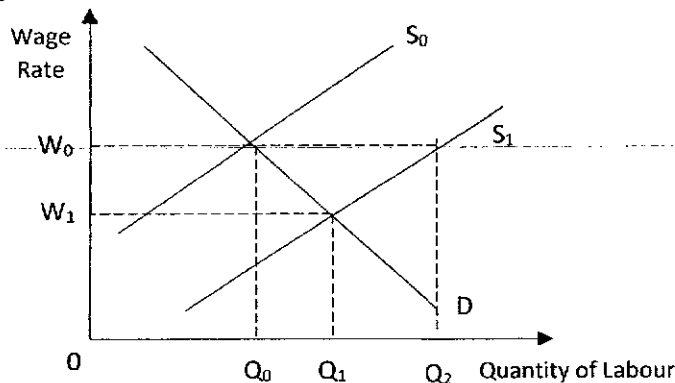
The macroeconomic stability of a country comprises both internal and external stability. A country's labour market refers to the demand and supply of labour in the country. The labour market, in particular the quantity of labour supply as well as skills or quality of the labour force, can have a significant impact on the macroeconomic stability of the economy.

Body

1. Explain how labour supply affects internal stability

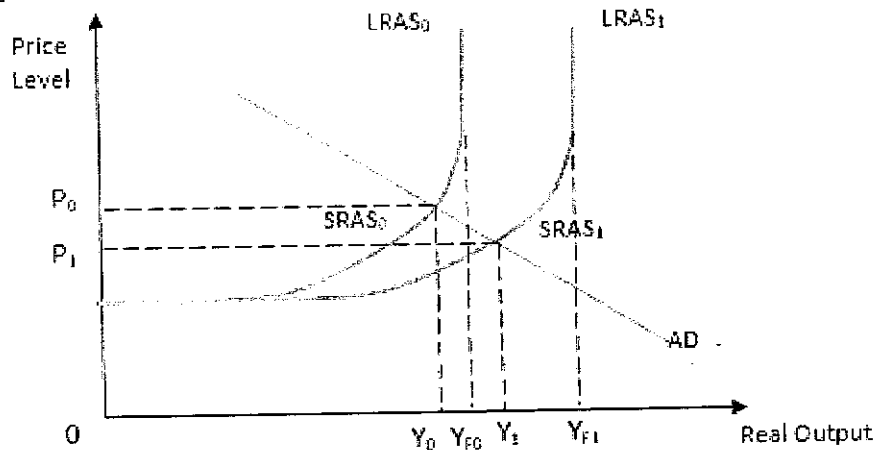
- The labour supply of a country includes the quantity of labour (ie. number of age eligible people who are willing and able to work) as well as the quality (or skills level) of the workforce. The labour supply affects the short run (SRAS) and long run aggregate supply (LRAS) of the economy.
- An increase in labour supply in terms of quantity of labour will lead to a fall in wages, ceteris paribus. The increase in supply of labour results in a surplus of labour at the prevailing wage. This causes a fall in wages from W_0 to W_1 as shown in Fig 1. The fall in wages results in a fall in labour cost and hence cost of production of firms, leading to an increase in SRAS.

Fig 1



- The increase in SRAS is shown by a rightward shift of SRAS from $SRAS_0$ to $SRAS_1$. This leads to an increase in real output from Y_0 to Y_1 shown in Fig 2, as firms are incentivised by the lower cost of production to increase output so as to earn more profits. Hence actual economic growth is achieved.
- The quantity of labour determines how much output of goods and services the country can produce with its given resources, ie the productive capacity of the country. This can be shown by a rightward shift of the LRAS from $LRAS_0$ to $LRAS_1$, thus achieving potential growth. The increase in LRAS ensures that economic growth can be achieved without causing inflationary pressure.

Fig 2



- The increase in real output due to the increase in SRAS means that more labour is needed to produce the increase in output. This increases the derived demand of labour, thus causing a fall in cyclical unemployment.
- In addition, the increase in SRAS leads to a fall in general price level from P_0 to P_1 as firms pass on the lower cost of production to consumers by reducing prices. This helps to achieve lower inflation or price stability in the economy.

2. Explain how labour supply can affect external stability

- Changes in labour supply affect the cost of labour and will thus have an impact on export competitiveness. Taking the example of an increase in labour supply as explained above, the wage rate will fall causing a fall in cost of production and hence an increase in SRAS. This leads to an improvement in the country's balance of trade, ceteris paribus.
- At the same time, the fall in prices of domestic goods due to the lower cost of production make them relatively cheaper compared to imports. This reduces the demand for imports, reducing import expenditure, and hence improving the balance of trade.
- Thus, there will be an improvement in the country's balance of payments

3. Explain how internal stability (economic growth) can affect the demand for labour

- Achieving internal stability such as economic growth can affect the demand for labour in the labour market. Economic growth refers to the increase in real national income which may be caused by an increase in AD and/or SRAS. Firms will need to hire more labour to produce the increase in real output, thus increasing the demand for labour.

4. Explain how external stability can affect the demand for labour

- Achieving external stability such as an improvement in balance of trade can affect the demand for labour in the labour market. An improvement in balance of trade due to an increase in demand for a country's export will lead to increase in output of the exporting industries. Firms in the export industries will need to hire more labour to produce the increase in output, thus increasing the demand for labour.

Conclusion

It can therefore be seen from the above analysis that the labour supply can impact on internal and external stability of a country, while at the same time achievement of internal and external stability can in turn affect labour demand in the country. Hence there is a close linkage between the labour market and the internal and external stability of a country.

Mark Scheme

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L3 8 - 10	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ EXCELLENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. ➤ EXCELLENT depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p>

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- (b) Discuss the economic policies that might have resulted in Singapore achieving a strong macroeconomic performance. [15]

Suggested answer for part (b)

Introduction

Strong macroeconomic performance may be defined in terms of achieving the macroeconomic objectives of sustainable and/or inclusive economic growth, low inflation, low unemployment and healthy balance of payments. The achievement of these four macroeconomic objectives have been made possible in Singapore through the use of exchange rate policy, fiscal policy and supply-side policies.

Body

1. Discuss how exchange rate policy helps to achieve macroeconomic stability

- **Exchange rate appreciation helps to achieve price stability**
- The Monetary Authority of Singapore (MAS) adopts a policy of gradual and modest appreciation of the exchange rate to achieve price stability.
- An appreciation of the exchange rate will make price of imports cheaper in the home currency. Since Singapore relies heavily on imported inputs, the fall in prices of imports will help to reduce cost of production of firms. This will lead to an increase in SRAS, resulting in a fall in general price level. This helps to reduce cost-push inflation and hence price stability is achieved.

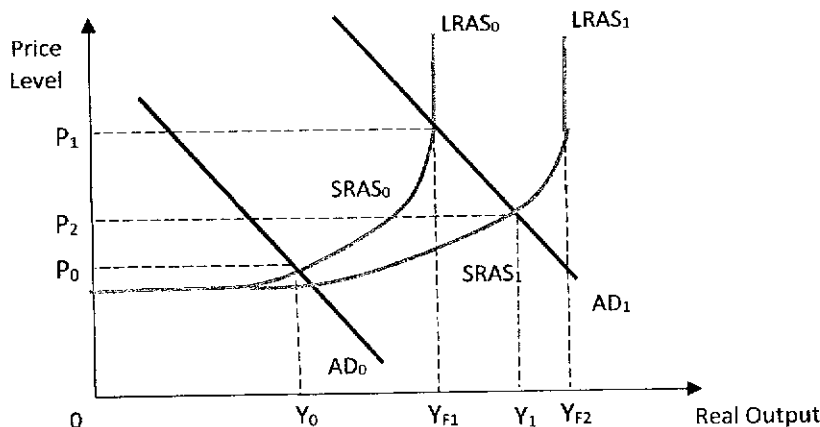
Limitations of Exchange Rate Policy

- However, the use of exchange rate policy can result in trade-offs or conflict in the macroeconomic objectives. While exchange rate appreciation can help to achieve price stability, it can cause a worsening of the balance of trade. The fall in (X-M) will also cause a fall in AD, leading to a fall in economic growth and possible increase in unemployment.
- In the very short run, the effectiveness of exchange rate is affected by the J-curve effect. As a result, Marshall-Lerner condition may not be met and the outcome of the change in exchange rate may be the opposite of what is intended.

2. Discuss how fiscal policy helps to achieve sustainable and inclusive economic growth and low unemployment

- In times of recession or economic slowdown, Singapore adopts expansionary fiscal policy to stimulate economic growth and thus achieve macroeconomic stability. The government may increase G or reduce taxes by giving more tax rebates to households, thus increasing their disposable income and stimulating consumption spending.
- The increase in G and C leads to an increase in AD, causing a more than proportionate increase in national income through the multiplier effect. This results in national income increasing by a multiple of the initial increase in AD. With reference to Fig 5, the real national income increases from Y_0 to Y_{F1} thus achieving economic growth.
- With economic growth, the derived demand for labour also increases as firms hire more labour to increase output, leading to a fall in cyclical unemployment, hence achieving low unemployment.

Fig 5



Limitations of Fiscal Policy

- Fiscal policy may result in trade-offs or conflicts of macroeconomic objectives, and thus hinder the achievement of macroeconomic stability. Expansionary fiscal policy can lead to demand-pull inflation if the increase in AD is

excessive, while contractionary fiscal policy conflicts with economic growth and employment, while it helps to achieve price stability.

3. Discuss how supply-side policies help to achieve the macroeconomic objectives

- Singapore's supply-side policies are instrumental to the strong macroeconomic performance of the country. These supply-side policies include skills training among others.
- Skills Training – The government's SkillsFuture initiative provides various incentives such as course fee subsidies, grants and training allowances to encourage workers to upgrade their skills or acquire new skills in growing industries. This increases the productive capacity of the economy, resulting in a rightward shift of the LRAS.
- The various supply-side policies lead to an increase in both SRAS and LRAS as shown in Fig 5

Limitations of Supply-Side Policies

- Supply-side policies are long term in nature and tend to have long time lags before their effects are realised. It may take a few years to train a worker in the new skills required to move into growing industries such as artificial intelligence, cybersecurity and allied healthcare. Large scale infrastructure projects such as building a new airport terminal or MRT line may also take several years before they are completed.

Conclusion

As seen from the above discussion, Singapore's strong macroeconomic performance over the years can be attributed to its combination of both demand management policies and supply-side policies aimed at achieving macroeconomic stability in the short run and sustainable and inclusive growth in the long run.

Mark Scheme

Levels	Descriptors
L3 8 - 10	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ EXCELLENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. ➤ EXCELLENT depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing.
	<p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Well-labelled and well-referred to diagram(s) / tool(s) of analysis drawn with precision (where appropriate). ➤ Relevant examples and accurate use of facts. ➤ Logical structure.
L2 5 - 7	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> ➤ At least GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of relevance and significance in answering the question. ➤ At least GOOD depth in economic analysis that reflects the following in MOST explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ➤ Diagram(s) / Tool(s) of analysis that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate). ➤ Example(s). ➤ Logical structure.
High L1 3 - 4	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <ul style="list-style-type: none"> ➤ INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question. ➤ INSUFFICIENT depth in economic analysis that may reflect the following:

	<ul style="list-style-type: none"> ✓ Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.
Low L1 1 - 2	<p>For an answer that:</p> <ul style="list-style-type: none"> ➤ Is irrelevant in analysis but may contain an introduction that addresses the question or contains no economic analysis but may contain a few statements that are relevant to the concepts required to answer the question. ➤ Contains fundamental conceptual errors in analysis.
Levels	Descriptors
E3 4 - 5	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ A synthesis of earlier economic arguments to arrive at relevant judgements/decisions (i.e. answer the question). ➤ Well-explained criteria-based evaluative comments supported by accurate and clear analysis to provide fairness in views. ➤ A good summative conclusion.
E2 2 - 3	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ Relevant judgement(s)/decision(s) (i.e. answer the question) that may not follow from earlier economic arguments. ➤ Criteria-based evaluative comment(s) supported by analysis to provide fairness in views but the comment(s) may not be well-explained, may be unclear and/or may be inaccurate at times.
E1 1	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> ➤ Relevant but unexplained evaluative judgement(s)/statement(s) i.e. evaluative judgement(s)/statement(s) not supported by analysis or ➤ A relevant conclusion.

