

# 2019

## JC2 H1 Economics

1.	Anderson Serangoon Junior College	
2.	Anglo Chinese Junior College	
3.	Catholic Junior College	
4.	Hwa Chong Institution	
5.	Jurong Pioneer Junior College	
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**ANDERSON SERANGOON JUNIOR COLLEGE  
JC2 PRELIMINARY EXAMINATION 2019**

**ECONOMICS  
Higher 1**

**8823/01**

Paper 1

**29 August 2019**

**3 hours**

Additional Materials:      Answer Booklet

**READ THESE INSTRUCTIONS FIRST**

Write down your name and class in the boxes of the answer booklet.  
Please write clearly and use capital letters.

Write in dark blue or black pen.  
HB pencil may be used for graphs and diagrams only.

**DO NOT WRITE ON ANY BARCODES.**

Write your answers in the answer booklet. Use both sides of the paper. Please leave two blank lines in between your answers to each question.

Write the number of the question you are responding to in the first margin. If the question you are responding to also contain parts, for example 1a, write the question part in the second margin.

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

Do not tear out any part of the answer booklet provided.

All work must be handed in. If you have used any additional booklets (including graph paper booklets) please insert them inside the answer 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 **8** printed pages and **0** blank page

**Question 1:****The healthcare services market****Table 1: Gross Domestic Product (GDP) per capita at Purchasing Power Parity (PPP) in US\$ and life expectancy at birth of selected countries, 2015**

Country	GDP per Capita, PPP (US\$)	Life expectancy at birth (Years)
China	14,373	76.0
India	6,137	68.3
Japan	40,701	83.9
Switzerland	62,500	83.0
United States	56,207	78.8

Source: OECD Indicators 2017, accessed 15 July 2019

**Extract 1: Health and the economy: A vital relationship**

Investment in health is not only a desirable, but also an essential priority for most societies. However, our health systems face tough and complex challenges, in part derived from new pressures, such as ageing populations, growing prevalence of chronic illnesses, and intensive use of expensive yet vital health technologies.

Health performance and economic performance are interlinked. Wealthier countries have healthier populations for a start. And it is a basic truth that poverty, mainly through infant malnourishment and mortality, adversely affects life expectancy. The opposite is also true – improving the health of a nation's citizens can directly result in economic growth, because there will be more people able to conduct effective activities in the workforce. The effects of health on development are clear. Countries with weak health and education conditions find it harder to achieve sustained growth. Indeed, economic evidence confirms that a 10% improvement in life expectancy at birth is associated with a rise in economic growth of some 0.3-0.4 percentage points a year.

Policy choices to improve healthcare access cannot be taken lightly. Health financing, through out-of-pocket expenditures, is inequitable and can expose whole populations to huge cost burdens that block development and simply perpetuate the disease/poverty trap. On the other hand, health systems need financing and investment to improve their performance, yet this need cannot in turn impose an unfair burden on national spending or competitiveness. This is a very delicate balance for policymakers to have to strike. In other words, if you want to raise investment in health spending, you may need to find cuts elsewhere in the economic system. As policymakers with public responsibilities, we must never forget that decisions taken in one sphere affect conditions, stakeholders and policies in another.

Source: OECD Observer, accessed 15 July 2019

**Extract 2: Consumers and their demand for healthcare**

Globally, healthcare demand is gradually rising. The increasing prevalence of preventable illness is contributing to this growth and this is influenced by choices consumers make. For instance, obesity, which can increase the risk of diabetes, stroke, and heart disease is on the rise in the United States. Though obesity is preventable, some patients do not take appropriate control of their health and seek treatment

when conditions become chronic. The lack of initiative to lead a healthy life and prevent chronic illnesses such as obesity has led to the rise in demand for healthcare services.

Overall, healthcare is only valued to the extent that it improves health and the consumers' ability to purchase healthcare is ultimately limited by the customers' income, and consumers are likely to forgo spending on other products to purchase the medical care needed.

Source: Journal of Health and Medical Economics, accessed 15 July 2019

### **Extract 3: Gaining better control of rising healthcare prices**

Prices of healthcare services are rapidly rising globally as populations age, chronic conditions become more prevalent and demand for healthcare services outpaces supply. In Asia, several developments continue to drive an upward trend in the prices of healthcare services today. The availability of advanced medical technology and the appeal of medical tourism are just some of the key factors behind an unabated rise. At the same time, research has found that a 10% rise in price of healthcare services leads to a 4.1% fall in quantity demanded.

In Singapore, beyond the demographic changes, the cost of running a medical practice has also gone up tremendously over the past few years. Two major hospitals started operations over the past two years. They are supposed to bring in more capacity and competition, and lower costs. But an unintended consequence is the acute shortage of skilled medical personnel. Nurses were offered a significant pay rise to join the new hospitals. In return, existing hospitals have had to match the pay rise to keep their staff. In addition, the resale prices of private medical clinics have also gone through the roof. All these increases in overheads will eventually lead to higher hospital facility fees.

Hoping to alleviate the issue in Singapore, the Ministry of Health recently appointed a committee to develop medical fee benchmarks for common clinical procedures, with a view of including less common and expensive procedures like X-rays and magnetic resonance imaging (MRIs) in the longer term. Other strategies include ensuring that people are aware of the significance and impact of healthy living. Despite oceans of clinical data, many people still aren't aware of how profoundly their everyday decisions from a young age - what they eat and drink, whether they smoke, how often they exercise - really do significantly impact their long-term health.

Source: *The Business Times*, 27 March 2018

### **Extract 4: Affordable healthcare for all**

The Ministry of Health (MOH) is looking to make sure that healthcare remains affordable for all. MOH is simplifying the criteria for means-testing in the intermediate and long-term care sector. It will be changed to per capita household income, which only includes those family members that the elderly is living with.

Subsidies for nursing homes and clinics under the Community Health Assist Scheme (CHAS) will also be expanded to include the middle income. The per capita household income ceilings to qualify for these subsidies will be increased for intermediate and long-term care. These changes will help the low income significantly, but also signal a major shift towards help for the middle income. Drug subsidies will also be raised, especially those required to treat chronic conditions.

Source: Channel News Asia, 24 March 2017

### Extract 5: Singapore Budget 2018: Spending needs to grow in healthcare

SINGAPORE will put aside some S\$10.2 billion for healthcare expenditure, Finance Minister Heng Swee Keat said on Monday. Unveiling the Budget for 2018, Mr Heng said the government expects to spend more on healthcare.

"We will have to build new healthcare capacity to meet the rising demand, and also invest in new medical technologies to improve care quality," Mr Heng said.

He said within the next five years, Singapore will build six more general and community hospitals, four new polyclinics and more nursing homes and eldercare centres across the island.

Source: *The Business Times*, 19 February 2018

### Questions

- (a) With reference to Table 1 and Extract 1,
- (i) State the relationship between GDP per capita (PPP) and life expectancy. [1]
  - (ii) Discuss whether the data suggests that the United States has a higher standard of living than Japan. [6]
- (b) (i) Using a diagram, explain why there is a significant pay rise for nurses. [4]
- (ii) With reference to Extract 3, account for the rising prices of healthcare services in Singapore and comment whether prices of healthcare services will continue to rise in the future. [8]
- (c) With the aid of a diagram, explain why consumers, rather than producers will benefit more from a subsidy on healthcare services. [4]
- (d) Explain what is meant by equity and why subsidies of healthcare services based on "means-testing" is likely to be equitable. [3]
- (e) (i) Explain why the Singapore government intervenes in the market for merit goods such as healthcare services. [7]
- (ii) As a consultant economist, what policies would you suggest to the Singapore government to address the inefficiency in resource allocation for healthcare services and which would you most recommend? Justify your answer. [12]

[Total: 45]

## Question 2

## The United States Economy

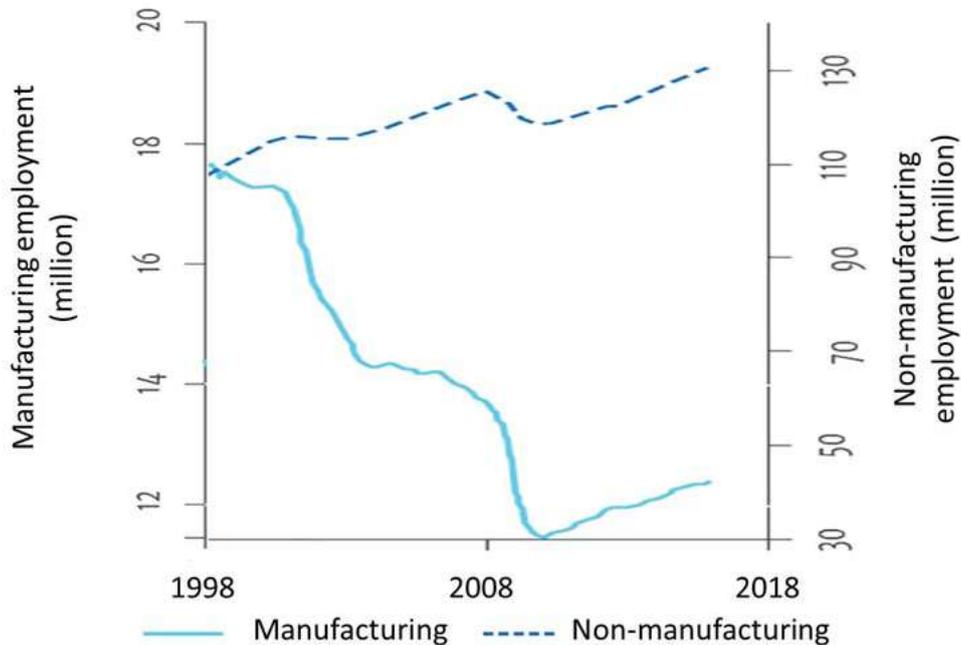
## Extract 6: Tariffs and free trade explained

The United States (US) has a massive trade deficit with China, meaning that the value of US imports from China is much more than the value of US exports to China. In May 2018, US President Donald Trump announced a 25% tariff on all steel imports. Protectionism is trying to use restrictions such as import tariffs, a type of indirect tax on certain imports, to boost a country's industry, and shield it from foreign competition. In theory, taxing items coming into the country means people are less likely to buy them as they become more expensive and they will buy cheaper local products instead. Thus, taxing imported steel will mean US companies will buy local steel instead and help lift profits for local steel makers. But the US companies that need raw materials, like car and aeroplane makers, will see their costs rise. That means they might have to increase the prices on their finished products which would hurt consumers.

Free trade is the opposite of protectionism. It means as few tariffs as possible, giving people the freedom to buy cheaper products from anywhere in the world. But that means companies are less likely to buy more costly local products and there may be a loss of jobs in sectors selling such local products.

Source: BBC News, 10 May 2019

Figure 1: Manufacturing and non-manufacturing employment from 1998 to 2018



Source: *Microeconomics Insights*, accessed 3 August 2019

### **Extract 7: Understanding the decline in manufacturing employment**

The US manufacturing sector started shedding jobs in huge numbers in the early 2000s, coincident with a sharp appreciation of the dollar and a widening trade deficit. Yet, statistics seem to show the sector's output keeping up with the rest of the growing economy. Many economists saw this as a sign that high productivity growth allowed manufacturing output to expand even as the workforce dwindled. This view points to automation, not rising consumption of imports, as the main cause of manufacturing's job losses.

However, Vice-President and Director of Research of the Upjohn Institute, Susan Houseman, cited recent research suggesting otherwise. The apparent strong growth was driven by a single industry within manufacturing: computer and electronics products. And while people have been buying more manufactured products, these products are increasingly made overseas where cost of production is lower. This shift to buying imports is further compounded by an appreciating exchange rate, which makes domestic manufactured products more expensive to local buyers and also hampers the export competitiveness of these products.

The Economic Policy Institute's research director, Josh Bivens addressed the importance of managing the exchange rate to minimise damage to the economy. "There needs to be real credibility that the US is now committed to never again allowing the dollar to just destroy the US manufacturing sector," Bivens said. He also echoed Houseman's call to expand vocational training programmes to improve the skills of workers in manufacturing.

Source: W.E. Upjohn Institute for Employment Research, June 2018

### **Extract 8: Time to capitalise on rare earth abundance in the US**

The Chinese government has threatened to stop shipments of strategically vital rare earth minerals to the US to gain leverage in the ongoing trade dispute. Not only does this potentially affect costs of production, but this has also sparked fear and uncertainty in US businesses.

Rare earth minerals are essential in the production of numerous 21<sup>st</sup> century technologies, from mobile phones and solar panels to electric batteries and military weapons systems. The good news is that these minerals are actually quite abundant, especially in the US. The bad news is this treasure chest of vital minerals remains in the ground due to extreme environmental rules.

The Japanese announced last year that they found minerals off their coast that are so large, they described the supply as "semi infinite" and seem primed to take on Chinese dominance in rare earth minerals. Though it will take time to get the minerals out of the ground and build the infrastructure to get them to market, China's recent threats should be a wakeup call for US to get going now. A new investment into the American mining industry will create tens of thousands of new jobs and over time tens of billions of dollars of added output.

Source: Stephen Moore and Nicolas Loris, *The Hill* website, 6 April 2019

**Extract 9: Reimagining rare earth elements in a sacrifice zone-free future**

The rare earth elements may not be rare, geologically speaking, but they are hard to get in large quantities, as they are difficult and costly to separate and purify. The industrial separation processes produce heaps of nasty byproducts, including concentrated acids and radioactive waste. As the Chinese government pursued a policy that led to the country's dominance in world exports of rare earth, it knowingly accepted terrible costs to the health of the people around the region's mines and grievous damage to the environment. Scholars call this approach the creation of a "sacrifice zone".

A more just way forward begins with the principles of green chemistry. Can we redesign processes and products to make rare earth production less toxic and impactful upon the environment? Research suggests some ways to do that. An acid-free technique for dissolving and recovering rare earths from shredded hard drives has emerged, developed by researchers at Ames Laboratory.

Businesses also can be an important player in pioneering new methods of recovering rare earth elements. Apple is experimenting with a robot named Daisy to disassemble returned products to more efficiently recover the various metals, including rare earths.

Source: Robert Turner, *GreenBiz* website, 6 Feb 2019

**Extract 10: Quality of life in the US**

The US performs very well in many measures of well-being, according to the Organisation for Economic Co-operation and Development (OECD). The average household income per capita is US\$45,284 a year. But there is a considerable gap between the richest and poorest – the top 20% of the population earn nearly nine times as much as the bottom 20%.

In terms of employment, 70% of people aged 15 to 64 in the US have a paid job while some 11% of employees work very long hours. In terms of pollution level, the level of atmospheric PM2.5 – tiny air pollutant particles small enough to enter and cause damage to the lungs – is 10.1 micrograms per cubic meter.

Source: OECD Better Life Index, accessed 15 Aug 2019

### Questions

- (a) With reference to Extract 6,
- (i) Identify the relationship between “imported steel” and “local steel”. [1]
  - (ii) Using demand and supply analysis, explain how “taxing imported steel” can “lift profits for local steel makers”. [3]
- (b) (i) Using Figure 1, compare the trends in employment data from 1998 to 2018. [2]
- (ii) With reference to Extract 7, explain **two** causes of the general trend in manufacturing employment as identified in (b)(i). [6]
  - (iii) Assess the policies the US can adopt to boost manufacturing employment. [8]
- (c) In response to the US taxes on imports, China has threatened to restrict exports of rare earth minerals to the US.
- With the aid of a diagram, explain how this response is expected to impact the US economy, and comment on what might determine the extent of this impact on the US. [8]
- (d) Using Extracts 8 and 9, explain **three** factors that the US government should consider in deciding whether to start mining its own “rare earth abundance”. [6]
- (e) With reference to Extract 10, discuss the indicators that would best allow the US government to determine whether the US has achieved an improvement in its standard of living. [11]

[Total: 45]

## Questions

(a) With reference to Table 1 and Extract 1,

(i) State the relationship between GDP per capita (PPP) and life expectancy. [1]

Positive Relationship or GDP per capita is positively correlated with life expectancy.

(ii) Discuss whether the data suggests that the United States has a higher standard of living than Japan. [6]

Standard of living has two aspects, material and non material. The data provided GDP/Capita (in PPP) which allows us to compare the level on material SOL across countries and life expectancy with allows us to compare the level of non-material SOL.

GDP capita in PPP is higher in USA, suggesting that after controlling for the differences in cost of living across two countries, the residents in USA has a higher purchasing power and higher material SOL as they can consume more goods and services.

However, in terms of non material standard of living, Japan is said to be higher. The life expectancy is higher for Japan and this means that the residents in Japan are healthier and may lead a less stressful life. This means that the quality of life is higher in Japan.

Thus, in view of this, we may need additional data to conclude whether US has a higher standard of living than Japan as the data is inconclusive. While it does suggest that US has higher material SOL, we need to see other indicators of non-material SOL. In this case, we may need additional information such as crime rates and quantity of leisure hours to have a holistic comparison of the quality of life before we can make a judgement.

### **Mark Scheme**

1m for understanding of material and non material

Up to 3 marks for explanation for explanation of material and non material (Idea of differences in COL is essential for full 3marks)

2 marks for judgement and explanation.

(b) (i) Using a diagram, explain why there is a significant pay rise for nurses. [4]

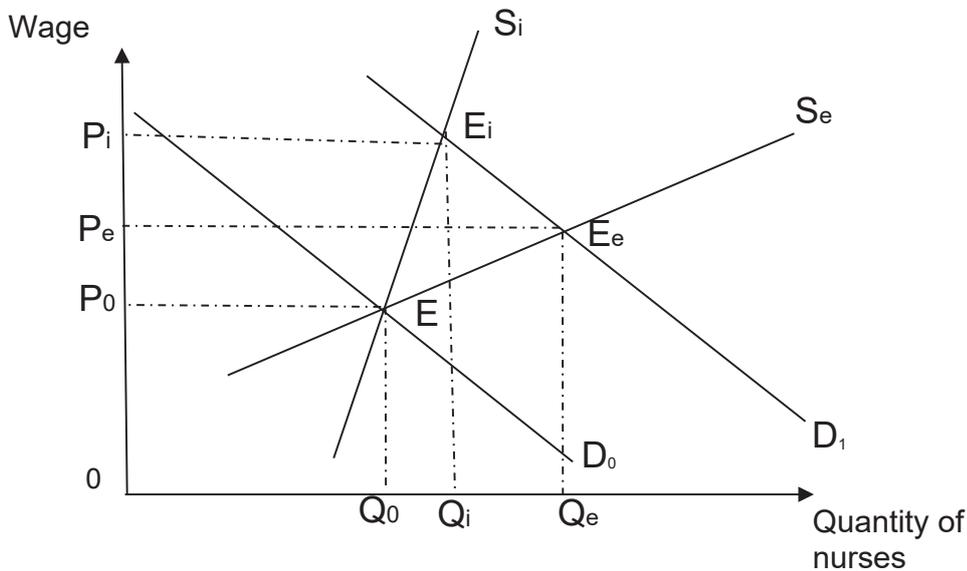
Due to aging population, there is a need for more healthcare services to be rendered and hence, there is an increase in DD for healthcare services. Therefore, the derived DD for nurses will increase because nurses is a factor of production of healthcare in the form of labour.

Or

As more hospitals are being built, there is a need for more medical staff. Therefore, the derived DD for nurses will increase because nurses is a factor of production of healthcare in the form of labour.

PES < 1 because it takes time to train and equip nurses with the necessary skills to provide an effective healthcare service.

Hence, an increase in DD, with  $PES < 1$ , would result in a shortage, which exerts an upward pressure on nurses' wages. As the wages increase, the quantity supplied of nurses only increase less than proportionately. As such, wages need to rise sharply to clear the shortage. This is why there is a significant pay rise from  $P_0$  to  $P_i$  as illustrated in the diagram.



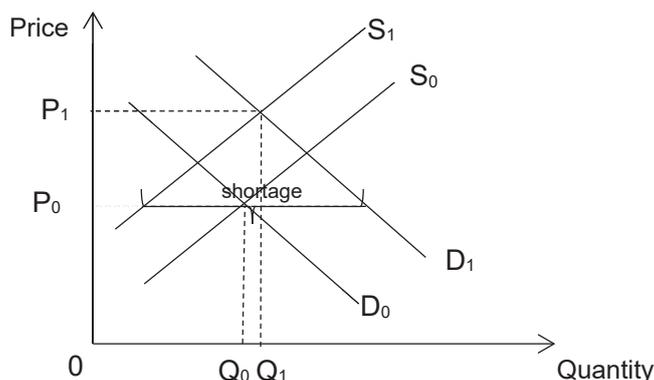
**Mark Scheme**

- 1m for rise in derived demand
- 1m for explanation of PES
- 1m for explanation of significant rise (How PES affect the extent of rise in price)
- 1m for diagram (Must have different PES to illustrate the extent of sharp rise)

(ii) With reference to Extract 3, account for the rising prices of healthcare services in Singapore and comment whether prices of healthcare services will continue to rise in the future. [8]

An “appeal of medical tourism” (Ext 3) would mean that there is a change in taste and preferences towards healthcare services. Hence, there is an increase in DD for healthcare services from  $D_0$  to  $D_1$ .

Furthermore, the “existing hospitals have had to match the pay rise to keep their staff” (Ext 3) which meant higher wages for healthcare workers. This would in turn increase the cost of production of healthcare services and make it less profitable for healthcare providers to provide the services. Hence there will be a fall in SS from  $S_0$  to  $S_1$ .



With an increase in DD and a fall in SS, this results in a large shortage which exerts an upward pressure on healthcare services' price. Hence, there is rising price of healthcare services as price increased from P0 to P1.

Price of healthcare services may not continue to rise in the future as the ceteris paribus assumption may not hold. As in the "next five years, Singapore will build six more general and community hospitals, four new polyclinics and more nursing homes and eldercare centres across the island" (Ext 5). This means that there will be a future increase in SS of healthcare services which would help to lower healthcare services prices.

**Mark Scheme (6+2)**

Up to 3 marks to explanation of DD/SS factors (Use of EGYPT or WETPIGS must be evident)

PAP 1m (Shortage+Upward Pressure)

Diagram (up to 2m, for a combined diagram)

Comment (2m)

Take a stand (1m) + explain any other factors which changes DD or SS and the impact on price.

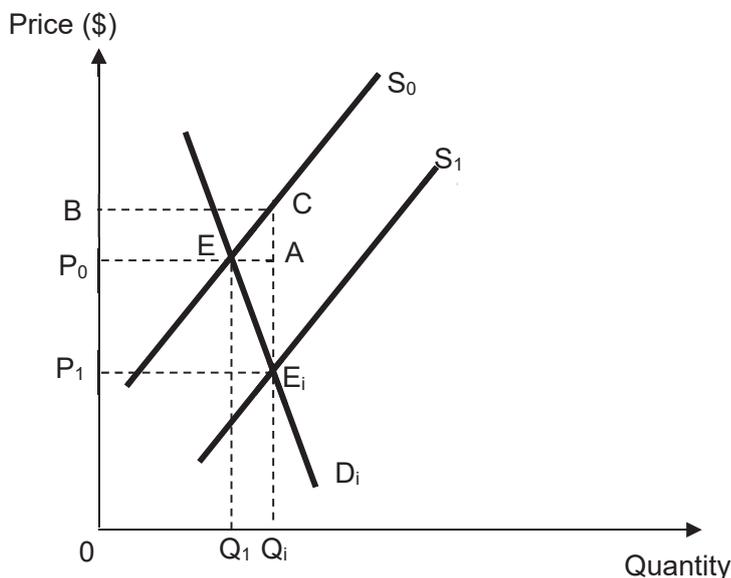
- (c) With the aid of a diagram, explain why consumers, rather than producers will benefit more from a subsidy on healthcare services. [4]

With a subsidy on healthcare services, there will be a fall in the cost of production of the services and it will be more profitable for firms to produce the service. Hence, there will be an increase in SS of healthcare services from S0 to S1, resulting in a fall in price from P0 to P1.

Demand for healthcare services is relatively more price inelastic as it is deemed as necessity. This is further backed up by the data which shows a 10% rise in price, would only result in a 4% drop in quantity demanded (a less than proportionate fall in quantity demanded).

Furthermore, in order for consumers will enjoy a larger share of the subsidy, the demand for healthcare services has to be more price inelastic compared to the supply.

From the diagram, the subsidy expenditure is denoted by Area BCEiP1. Out of this entire area, the consumer's share of the subsidy is represented by Area P1CEiP1. This is in comparison to producer's smaller share of the subsidy represented by BACP0.



### Mark Scheme

COP fall → SS rise → P fall and Q rise (1m)

Explain why  $PED < 1$  (1m)

2m for diagram (Total subsidy, and consumer/producer distribution)

- (d) Explain what is meant by equity and why subsidies of healthcare services based on “means-testing” is likely to be equitable. [3]

Equity is defined as the fairness in distribution of economic welfare, and that there is an equitable (i.e. fair) distribution of goods and services. (1m)

Subsidy → **Fall in price** → **more affordable for lower income** groups → more people from lower income groups can enjoy healthcare services (1m)

This is an equitable outcome as healthcare is an **essential service which consumers should have access to regardless of their income level**. (1m)

1m for understanding of equity

1m for fall in price/ access for lower income group

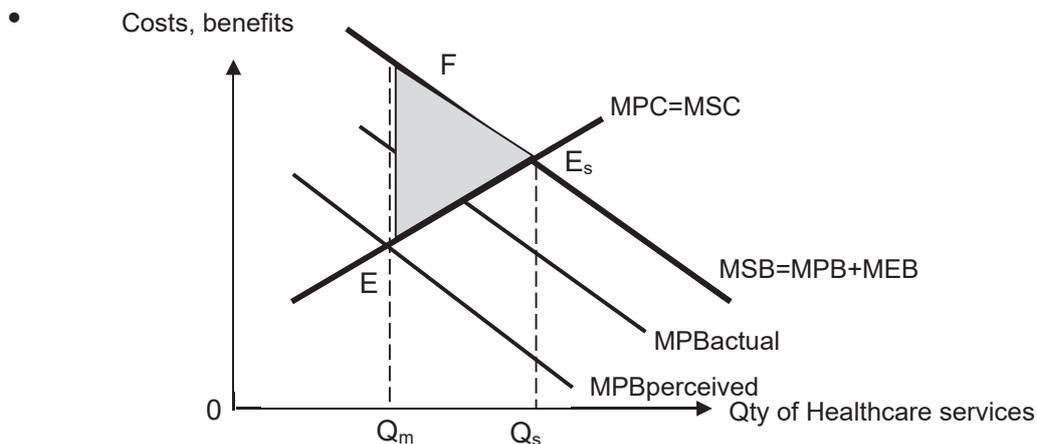
1m for nature of healthcare service

- (e) (i) Explain why the Singapore government intervenes in the market for merit goods such as healthcare services. [7]

- Merit goods are goods which the government deems as socially desirable but consumers are perceived to undervalue their benefits due to imperfect knowledge. These goods also generate positive externalities. The consumers will under-consume these goods and services and results in deadweight loss for the society, and hence, government will intervene to achieve allocative efficiency.
- Consumers suffer from imperfect information and positive externalities are generation from the consumption of healthcare services.
- Consumers will consume up to the quantity where  $MPB = MPC$  to maximise its own utility. The private benefit from consuming healthcare services is the satisfaction from being healthy while the private cost is the cost of healthcare services like cost of vaccinations and checkups. However, in the case of healthcare, consumers suffer from imperfect information as they tend to underestimate the benefits from regular checkup and vaccinations as these benefits only happen in the long run. For example, the protection from flu virus is only evident when there is a flu season going on and consumers tend to underestimate the benefit from this protection. Thus, there is a divergence between  $MPB_{perceived}$  and  $MPB_{actual}$ , and consumers will consume at  $Q_m$  where  $MPB_{perceive} = MPC$ .
- The consumption of healthcare also gives rise to third party effects which are often ignored by the consumers. For example, when a worker consumed vaccination and pay for the cost, the employer will benefit from a more productive worker due to lower rate of absenteeism. In this case,

employer, who is not directly involved in the production or consumption of vaccination, benefits from the higher profits due to productive workers and he does not pay for this benefit.

- The existence of positive externalities lead to a divergence between  $MPB_{actual}$  and  $MSB$  and the social equilibrium output is  $Q_s$  where  $MSB=MSC$ .
- Due to the existence of positive externalities and imperfect information, there is underconsumption of education by  $Q_m$  amount.
- Between  $Q_m$  and  $Q_s$ , the total benefit to the society is  $Q_m Q_s E_s F$  and this is greater than the total cost cost to the society,  $Q_m Q_s E E$ . Hence, if these additional  $Q_m$  units were produced and consumed, society's welfare would be higher but they do not. Thus, underconsumption of  $Q_m$  unit give rise to a monetary measure of total deadweight loss of area  $E F E_s$  to the society if consumption were determined by the market, and government will intervene to improve the society welfare.



Understanding of characteristics of merit good (1m)  
 Up to 3 marks from Explanation of Externalities (2m) + Explanation of Imperfect Information (2m)  
 Underconsumption (1m)  
 Explanation of DWL (1m)  
 Diagram (1m)

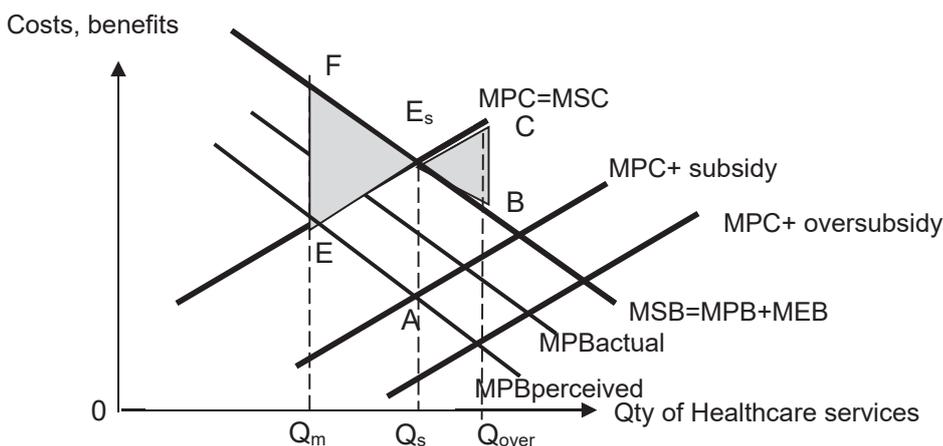
- (ii) As a consultant economist, what policies would you suggest to the Singapore government to address the inefficiency in resource allocation for healthcare services and which would you most recommend? Justify your answer. [12]

A government can respond to the issue of underconsumption with policies such as subsidy, rules and regulation, and education and campaign to increase the level of healthcare consumption. The recommendation will depend on the severity of the problem and the characteristics of the Singapore society.

**Subsidy:**

**To account for the presence of imperfect information and positive externalities, Singapore government can provide a subsidy equal to the divergence between  $MPB_{perceived}$  and  $MSB$  at  $Q_s$ . This will increase the consumption to the socially optimal amount.**

When a subsidy equal  $E_sA$  is given, it reduces the cost of production of producing healthcare services and this leads to a rise in supply of healthcare and a fall in the price of healthcare services. In turn, this reduces the private cost of consumption healthcare to  $MPC+subsidy$  and this increase the level of consumption of healthcare to  $Q_s$ , eliminating the deadweight loss of  $E_sF$ .



Subsidy is one of the recommended solution because it allows the market to continue to operate and consumers to exercise some sovereignty in the choice of healthcare services they wish to consume and producers will get to choose how they want to produce the different types of healthcare services.

However, it is likely that government may not estimate the extent of  $MEB$  correctly. As explained earlier, the extent of external benefit will differ depending on who consumes the vaccination and the different types of vaccination. Thus, Singapore government may oversubsidies the production of healthcare and and the greater fall in fall in price leads to overconsumption healthcare at  $Q_{over}$  and this could lead a deadweight loss of  $E_sBC$ .

Moreover, the demand for healthcare is price inelastic as highlighted in extract 3. This means that the fall in price leads to a less than proportionate rise in quantity demand. As a result, Singapore government may need to increase the level of subsidy to lead to a rise in  $Q_m$  to  $Q_s$ . This could lead to greater government subsidy and caused a strain on Singapore government budget. Moreover, there is also an opportunity cost incurred. Singapore government may have to reallocate resources from pre-school and post-university education to fund healthcare subsidy. Considering that Singapore is facing structural

changes in the economy and that social mobility is becoming an issue, the opportunity cost incurred from the government spending could be too big to ignore. In this case, subsidy may not be the most recommended.

An alternate policy is to implement education and campaign for the public to raise the awareness of the true benefits to consumers. This help to address the problem of imperfect information. As consumers are aware, they will change their taste and preferences towards healthcare services and this leads to a rise in demand for healthcare services and the consumption level will increase to  $Q_s$ , eliminating deadweight loss. For example, there are advertisements and roadshows to encourage people to go for medical check-ups more often and the importance of different vaccinations.

This policy can be effective for Singapore as Singapore consumers are relatively highly educated and they may understand the message from the campaign. In addition, it is cost effective to do such campaign in Singapore because of the high density of the consumers, and access to TV and Internet. As such, the spread of information can be achieved at relatively lower cost than subsidy.

However, this policy may not be the best on its own due to the issue of inequity. The poor may lack access to healthcare services even if they are aware of the benefits and they may not consume healthcare services. Moreover, it requires a long time to change the perception of vaccinations or healthcare services among the consumers. Even though the consumers are aware of the benefits, there is a lack of urgency to consume these services as they may prioritise their spending on other goods and services as highlighted in extract 1. In the event of a severe epidemic, this policy will not be the most recommended.

In view of the limitations, Singapore government may legislate the consumption of healthcare services. For example, in Singapore, there are compulsory vaccinations at birth and when young. This ensure that the quantity of healthcare services consume is socially optimal and eliminate the deadweight loss.

However, Singapore government may need to review the different sets of vaccinations required due to the changing information on the true benefits of different healthcare checkups and the vaccination. For example, as Singapore population ages, the focus would be more on checkups for age-related illnesses. HPV vaccine is also recommended for certain groups of consumers to reduce the risk of cancer. Thus, the effectiveness of this policy depends on the ability of the government to enforce and monitor.

## **Judgement**

### **Situation + Recommendation**

There should be a mixture of policies to tackle the problem as there are two sources of market failure. Considering that Singapore still have sufficient budget, she would able to allocate resources to finance the subsidy of healthcare services and supplement this policy with education and campaign such that that the consumers are aware of the true benefits and take responsibility of their own health, by going for appropriate checkups and vaccinations. Moving forward, the policy of education and campaign will help to reduce the burden on the government expenditure and ensure that Singapore has sufficient resources to support other areas of the economy such as education.

	Level Descriptor
L3 (6-9)	Good explanation of at least 2 relevant policies. Good explanation of limitations with relevance to Singapore context. (Explanation of why opp cost is important with application to Singapore).
L2 (3-5)	Explanation of adequate policies with some use of economic work Some application to Singapore context Undeveloped limitation of policies. (E.g Stating of opportunity cost)
L1 (1-2)	Mainly stating of policies with no use of economic framework
E1 (1-3)	A judgement with explanation.

[Total: 45]



**ANSWERS**

(a)	With reference to Extract 6,	
(a)(i)	Identify the relationship between “imported steel” and “local steel”.  Substitutes [1]	[1]
(a)(ii)	Using demand and supply analysis, explain how “taxing imported steel” can “lift profits for local steel makers”.  With a tax on imported steel, this raises the costs of production of imported steel, thereby causing the SS curve for imported steel to shift leftwards. [1]  Price of imported steel therefore increases, with a fall in Qd of imported steel. [1]  Because local steel is a substitute to imported steel, there will be an increase in DD for local steel. [1]  Therefore, P and Q both increases, causing TR to increase. Assuming no change to cost, profits increase. [1]	[3]
(b)(i)	Using Figure 1, compare the trend in unemployment rates from 1998 to 2018.  Manufacturing employment generally fell while non-manufacturing employment generally rose. [1]  Both non-manufacturing and manufacturing employment fell 2008 before rising in 2010. [1]	[2]
(b)(ii)	With reference to extract 7, explain <b>two</b> causes of the general trend in manufacturing employment as identified in (b)(ii).  With automation (Ext 7) being more efficient [1], the demand for manual labour, a substitute, decreases. Because they lack the skills to perform jobs linked to automation, such skills mismatch will result in structural unemployment. [1]  With an appreciation (Ext 7) [1], assuming Marshal-Lerner condition holds where $PED_x + PED_m > 1$ , (X-M) will fall. [1] AD falls, therefore causing derived demand for labour to fall, causing demand-deficient unemployment. [1] OR With consumers increasingly buying imported goods (Ext 7) [1], M increases. Ceteris paribus, X-M falls. [1] AD falls, therefore causing derived demand for labour to fall, causing demand-deficient unemployment. [1] OR	[6]

	<p>Consumers consume imported manufactured goods instead of local goods (Ext 7) [1]. C falls [1], AD falls, therefore causing derived demand for labour to fall, causing demand-deficient unemployment. [1]</p> <p>Max 5 for an answer that provides 2 examples of demand-deficient unemployment.</p> <p>For each cause, evidence/identify [1] + explanation [2].</p>	
(b)(iii)	<p>Assess the policies the US can adopt to boost manufacturing employment.</p> <p>Since one of the causes was due to appreciation (Ext 7), the US could <b>depreciate its currency</b>. This will result in a fall in the foreign price of exports and a rise in the domestic price of imports. Assuming MLC holds where <math>PED_x + PED_m &gt; 1</math>, this will lead to an increase in <math>(X-M)</math>. This translates to an increase in AD, causing firms to step up production and to employ more factors of production including labour. This will therefore reduce demand-deficient unemployment and boost employment. This policy is also supported by Bivens call to manage “exchange rates to minimise damage to the economy” (Ext 7).</p> <p>However, in the very short run, it is likely that the MLC may not hold, since contractual obligations may reduce the availability of substitutes to exports and imports, thereby causing the demand for exports and imports to be very price inelastic. This may mean that depreciation may first worsen the employment before improving it, so the US has to be mentally prepared to bear with it. Using such a policy also begs the question about the nature of the US economy, i.e., how significant <math>(X - M)</math> is as a proportion of AD. If this proportion is small, then the effect on employment may be rather limited. Finally, a depreciation of the currency may be taken as a sign of impending weakness in the economy. If not well-communicated, this depreciation may trigger a loss of confidence among consumers and businesses, thereby causing a further fall in AD and a fall in employment.</p> <p>Another policy that the US can adopt is the <b>training and retraining of workers</b>, a proposal echoed by Houseman (Ext 7). This will help to improve the skills of workers and the quality of labour. Not only does this potentially allow the structurally unemployed to be equipped with the relevant skills to complement the drive to automation, it may also prepare workers to move to a new (sunrise) industry. Also, with the quality of labour falling, this may translate into lowered costs of production across the economy, allowing for SRAS to increase, causing actual growth and allowing for derived demand for labour to increase.</p> <p>However, such training programmes typically takes a long time. Skills are not learnt overnight, and time is also needed for workers to become accustomed to those new skills. In the short run therefore, this policy on its own may not significantly boost employment.</p>	[8]

*Other policies:*

The US could also impose a tariff on manufactured products. This raises the cost of importing and thus supply will fall, causing the price of imported products to increase. This will then increase the demand for locally manufactured products, which in turn leads to an increase in the derived demand for labour, boosting manufacturing employment.

However, Extract 8 has shown how China is contemplating to reduce the shipment of rare earths to US, in response to tariffs being imposed. Imposing tariffs on other manufactured products may likewise cause the same issue to US, causing higher costs of imported factors of production, which may lead to imported inflation.

Additionally, should the tariffs be on factors of production like steel, this will translate into higher costs of production for companies requiring steel like the automobile industry, adversely impacting their profits.

**Evaluation**

In conclusion, given how there are two causes of unemployment seen in Extract 7, in order to ensure that the decline of manufacturing unemployment is fully addressed, the US can pursue both the monetary policy to boost employment in the short run, and couple it with supply-side policy to start the shift towards a longer-term and more sustainable pattern of employment.

Level	Knowledge, Application, Understanding and Analysis	Marks
L2	A well-developed balanced answer that discusses at least one contextually-supported policy.  Generic policies without context: max 4  1 contextually-supported policy with limitation: max 4	4 - 6
L1	Mainly descriptive; may have conceptual errors.  1 policy with limitation OR with context: max 3 1 policy without limitation AND without context: max 2	1 - 3
<b>Evaluation</b>		
Up to 2 marks for a valid evaluative comment based on analysis.		

(c)

In response to the US taxes on imports, China has threatened to restrict exports of rare earth minerals to the US.

[8]

With the aid of a diagram, explain how this response is expected to impact the US economy, and comment on what might determine the extent of this impact on the US.

With fewer rare earth imports, there will be a fall in SS of rare earth elements. Therefore, prices of rare earths increase, and since they are key factors of production (Ext 8), rise in COP across the economy. [1]

This causes the SRAS to fall from SRAS<sub>1</sub> to SRAS<sub>2</sub>, causing a fall in economic growth from Y<sub>1</sub> to Y<sub>2</sub>. Additionally, the general price level increases from P<sub>1</sub> to P<sub>2</sub>, causing cost-push inflation. [1]

Additionally, fear and uncertainty amongst businesses (Ext 8) may lead to a fall in investor outlook, causing I to fall. [1]

Since I is a component of AD, AD decreases from AD<sub>1</sub> to AD<sub>2</sub>, causing a further fall in real national income to Y<sub>3</sub>. [1]

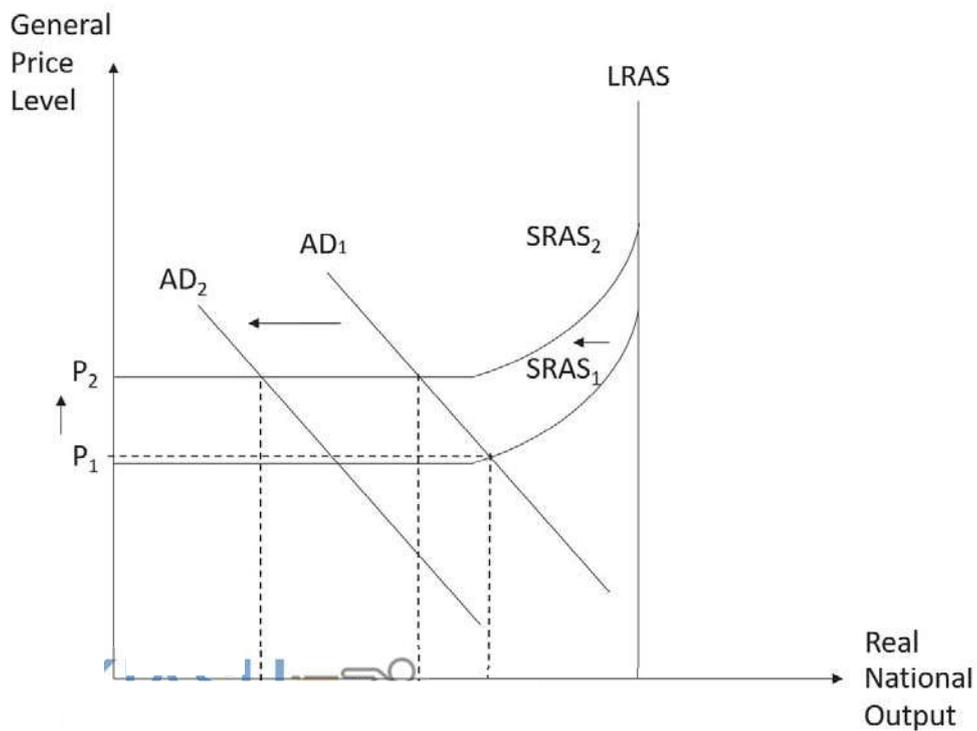


Diagram [1] for SRAS shift, [1] for AD shift. Allow for minor labelling errors/omissions.

	<p>Possible comments (non-exhaustive) for up to [2] marks (i.e., identify [1], explain [1])</p> <ul style="list-style-type: none"> <li>a) The proportion of industries which use rare earth as part of the US economy might be a determinant. Should such industries be a very small proportion, then perhaps the COP may not rise significantly across the whole economy and SRAS may not shift much.</li> <li>b) The time period might be a determinant. In the short run, the extent of impact may be more apparent should there be a sudden cut of such FOP. However, in the long run, with the availability of substitutes within the US, and the ability to import from other countries like Japan (Ext 8), the impact on SRAS and thus on inflation and growth may instead be positive should the costs of production be even lower than the Chinese rare earths.</li> <li>c) The extent of this impact on the US might depend on whether China even makes good its threat. Should it be mere political posturing, the SRAS may not change and there might not be noticeable impact.</li> </ul>	
(d)	<p>Using Extracts 8 and 9, explain <b>three</b> factors that the US government should consider in deciding whether to start mining its own “rare earth abundance”.</p> <p>The US government seeks to maximise social welfare, and should consider primarily its benefits and costs in deciding whether to undertake mining on its own. If total benefits outweigh total cost, the government should do so.</p> <p>Firstly, the US government should consider <b>benefits</b> that can be reaped from undertaking its own mining. A new investment into the US mining industry will create tens of thousands of new jobs and over time tens of billions of dollars of added output (Ext 8). By mining its own rare earth minerals therefore, the rise in G will lead to a rise in AD and hence a multiplied increase in real national output. Consequently, the increase in production would drive the derived demand for workers and will lead to a fall in demand-deficient unemployment. That US would be self-sufficient in rare earth minerals, and need not be beholden to the China for theirs supply would be icing on the cake.</p> <p>At the same time, the US government should also consider <b>costs</b> incurred in undertaking its own mining. This can include explicit and implicit costs. Explicit costs would be conceivably high, given that these minerals are “difficult and costly to separate and purify” (Ext 9). This would impact the government’s budget. There is also an implicit opportunity cost in terms of the benefits that could have been derived had that expenditure been channelled to other sectors of the economy, for instance, education and healthcare. To make matters worse, the pursuit of rare earth mining may cause “terrible costs to the health of the people around the regions’ mines” (Ext 9). These negative externalities will contribute to the worsening of the non-material SOL of the people, especially those living in the vicinity of the mines. Furthermore, given this negative externality, the US will suffer from an over-allocation of resources to mining, causing deadweight loss to society.</p>	[6]

	<p>Apart from benefits and costs, the US government may also wish to <b>gather information</b> on alternatives to the usual means of mining. For instance, the US government should consider whether it has the technological and technical means to engage in “green chemistry” that makes rare earth production that is less toxic (Ext 9), as this will reduce the marginal external cost generated. The government may also want to consider working towards having private firms recover existing rare earth mineral (Ext 9) rather than to mine for more new ones. That Japan could possibly provide an alternative import source of such minerals is another avenue the US government could consider. Such information gathered, should they prove to be valid and viable options, would help decision-making.</p> <p><i>NOTE: The third factor can be a different cost or benefit, or indeed any other factor (possibly framed as perspectives, info, or constraints).</i></p> <p>[2] for 1 well-explained benefit  [2] for 1 well-explained cost  [2] for any other factor (can still be benefit or cost)</p> <p>Max 5 for an answer solely on 3 benefits OR 3 costs  Max 4 for an answer that does not explicitly address benefits and costs</p>	
(e)	<p>With reference to Extract 10, discuss the indicators that would best allow the US government to determine whether the US has achieved an improvement in its standard of living.</p> <ol style="list-style-type: none"> <li>1. average household income per capita is US\$45,284</li> <li>2. 70% of people aged 15 to 64 in the US have a paid job while some 11% of employees work very long hours.</li> <li>3. considerable gap between the richest and poorest – the top 20% of the population earn nearly nine times as much as the bottom 20%</li> <li>4. The level of atmospheric PM2.5 – tiny air pollutant particles small enough to enter and cause damage to the lungs – is 10.1 micrograms per cubic meter</li> </ol> <p><b>Average Household income per capita</b>  One indicator could be average household per capita. Since the US’ average household income per capita is US\$45,284 a year, should this value be higher than the previous year’s, each person in a household on average would have experienced an increase in the quantity of goods and services consumed, allowing for an improvement in the material SOL.</p> <p><b>Limitation of household income per capita</b>  However, the indicator is just an average of income earned by households, rather than a sum total of all goods and services produced within the economy (which GDP measures). Also, this value does not seem to be adjusted for inflation rate. This is important because it can reflect the purchasing power of the average person, which is linked with material SOL. For example, should the household income per capita increased by 10% but prices increase by 20%, then the</p>	[11]

purchasing power and amount of goods and services that each household can consume would have fallen instead.

#### **Pollution rates: PM 2.5**

Another indicator could be the amount of pollution. With the PM2.5 being 10.1 micrograms per cubic meter, this gives us an understanding of how polluted the environment is, and should it be of a lower value than the previous year, this may mean that the pollution level has fallen and therefore the non-material SOL may have improved.

#### **Limitation of PM2.5**

However, one significant limitation is that this measure only takes into account the average for the whole of US - there may be some places with higher concentrations of PM2.5, such as pollutive production sites like a rare earths mine, while some other places may have lower concentrations. Even if the average value has fallen, the increase in PM2.5 in pollutive production sites may have been more than offset by the fall in PM2.5 in other areas of the US. In this case, the people staying near the pollutive production sites may instead experience a fall in non-material SOL.

#### **Gap between top 20% and bottom 20%**

This indicator gives a very rough sense of how the country is performing in terms of inequality. Should there be a reduction in the factor (9x) for which the top 20% earned as much as the bottom 20%, then there ought to have been an improvement in the income inequality, therefore contributing to the improvement in the material SOL across the economy.

#### **Limitation of income gap**

However, this crude measure does not take into account the remaining 60% of the workers - there may have been worsened income inequality between the top 20% and the next 60%, which may not have been captured if the comparison is only between the top and bottom 20%. A better measure would be the use of the Gini Coefficient, which can provide a more precise measure about how far the country is in terms of a perfectly equal income distribution.

#### **Evaluation**

In conclusion, there is no one best indicator, and there should instead be a range of indicators that government should examine to determine the change in SOL. All in all, the indicators would be better should there be data from previous years to compare with the indicators seen in extract 10 to have a better assessment of whether SOL has risen. Additionally, given how US is such a big country with 50 states, looking at the SOL within each state may provide US with more meaningful data on whether there might be inequalities amongst states.

Level	Knowledge, Application, Understanding and Analysis	Marks
L3	<p>A well-developed balanced answer that discusses at least two indicators supported by case evidence to determine whether SOL has improved.</p> <p><i>2 indicators with Limitations (both m and n-m) max 7</i></p>	7-9
L2	<p>A balanced answer that attempts to discuss two indicators supported by case evidence. Answer may have gaps in analysis.</p> <p><i>2 indicators with Limitations (both m) max 6</i></p> <p><i>1 indicator with Limitations (e.g. GDP) that seeks to go towards both m and n-m: max 5</i></p>	4-6
L1	<p>A one-sided/descriptive answer on indicators determining whether the SOL of US have risen. May have multiple conceptual errors.</p>	1-3
<b>Evaluation</b>		
Up to 3 marks for a valid evaluative comment based on analysis.		



**ANGLO-CHINESE JUNIOR COLLEGE**  
**2019 JC2 PRELIMINARY EXAMINATIONS**



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**ECONOMICS**

**Higher 1**

Paper 1

**8823/01**

27 August 2019

3 hours

Additional material: Answer paper

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**READ THESE INSTRUCTIONS FIRST**

Write your index number and name on all the work you hand in.

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

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

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

Begin each question on a **fresh** sheet of paper.

Answer **all** questions.

At the end of the examination, fasten your answers for **Question 1** and **Question 2** **separately** using the cover sheets provided.

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

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This document consists of **9** printed pages (excluding cover pages).

Please check that your question paper is complete.

Answer **all** questions.

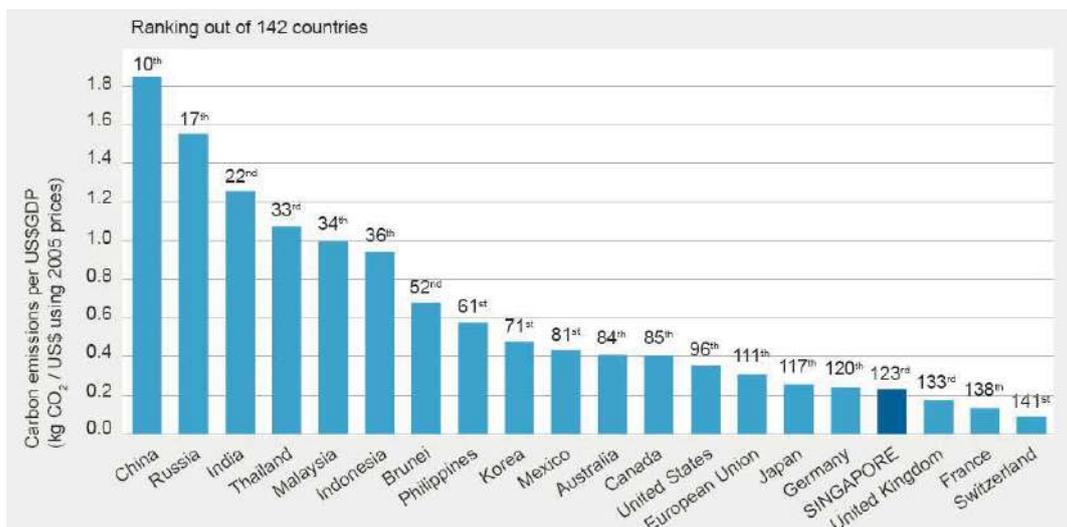
### Question 1: Transition to a Low Carbon Economy

**Table 1: Fuel mix for electricity generation in Singapore (%)**

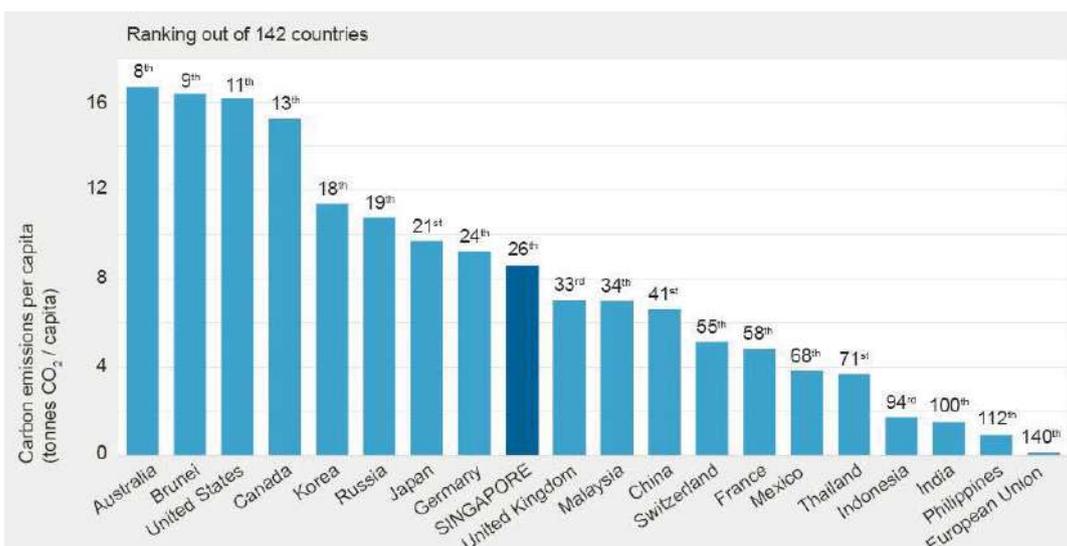
Fuel	2005	2017
Coal	0	1.3
Petroleum Products	23.1	0.7
Natural Gas	74.4	95.2
Others (includes renewable energy sources)	2.5	2.9

Source: Energy Market Authority, *Singapore Energy Statistics*, 2017

**Figure 1: Global carbon emissions per US\$GDP, 2015**



**Figure 2: Global carbon emissions per capita, 2015**



Source: National Climate Change Secretariat Singapore

**Extract 1: Renewable energy will be consistently cheaper than fossil fuels by 2020**

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The price of renewable energy is now falling so fast that it should be a consistently cheaper source of electricity generation than fossil fuels within just a few years. One key contributing factor for this is the continued technological advances made in renewable energy technologies. However, the biggest challenge stopping the world from going completely renewable is the fact that many renewable energy sources are not available all year round. Some days may be windier than others and the sun does not shine at night. Due to the intermittency of renewable energy sources, there is a need for energy storage. While there are storage technologies available today, they can be very expensive.

Source: news.energysage.com, accessed 17 July 2019

### **Extract 2: Singapore’s greenhouse gas emissions top 50 million tonnes**

In Singapore, the bulk of greenhouse gases generated comes from the burning of fossil fuels to generate energy for industries, buildings, households and transportation. The 50.9 million tonnes of greenhouse gases generated in 2014 is an increase of 4.8 percent from about 48.6 million tonnes generated in 2012. Singapore’s emissions per US dollar of Gross Domestic Product (US\$GDP) has decreased significantly over the years due to the economy growing at a faster pace compared to the increase in the country’s total greenhouse gas emissions.

Since the early 2000s, Singapore has largely switched to a cleaner fuel mix — from fuel to natural gas — for electricity generation. While this has played a major part in reducing emissions, the government is of the view that ‘there are limits to how much more emissions can be reduced by switching fuels, as natural gas currently constitutes about 95 percent of our fuel mix for electricity generation’.

Source: *Today Online*, 8 January 2019

### **Extract 3: Carbon pricing a necessary step as part of Singapore’s climate strategy**

The Singapore government had announced that it will be implementing a carbon tax from 2019 to reduce the country’s emissions of heat-trapping greenhouse gases. Under the carbon tax scheme, all power generation plants and large direct greenhouse gas emitters in Singapore producing 25,000 tonnes or more of greenhouse gas emissions a year will have to pay an initial tax rate of \$5 per tonne of emissions from 2019 to 2023. There are currently 30 to 40 of such large emitters, said the National Climate Change Secretariat (NCCS). Singapore is the first South-east Asian country to have such a tax.

This rate will be reviewed by 2023, and there are plans to increase it to between \$10 and \$15 per tonne of emissions by 2030. However, some experts caution against raising the tax rate too quickly. OCBC Bank’s Head of Treasury Research and Strategy, Selena Ling, said that in deciding on the \$5 rate, the government weighed the impact of the tax on equity and the country’s economic competitiveness as an export manufacturing hub.

While the carbon tax will be imposed only on large direct greenhouse gas emitters, there will be knock-on effects on the rest of the economy but economists believe that the impact of the carbon tax on most businesses and households in Singapore should be modest. ExxonMobil, which has its largest refinery and petrochemical complex in the world in Singapore, noted that a carbon tax represents additional cost for the refining and petrochemical industry in the

**[Turn over**

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country. In response to businesses' concerns, the government said that putting a price on carbon is the right thing to do, considering the environmental damage caused by climate change.

To help businesses with the transition, the government will tap on the carbon tax revenue collected to fund green initiatives through existing schemes such as the Productivity Grant (Energy Efficiency), which encourages industrial facility owners and operators to invest in energy-efficient equipment or technologies, and the Energy Efficiency Fund (E2F), which supports companies undertaking energy efficiency assessments and investments. Lower income households will also receive help in the form of additional utilities rebates through the GST Voucher U-Save scheme.

Source: *The Straits Times*, 12 December 2018 and 21 February 2017

#### **Extract 4: Climate change campaigns on the cards for Singapore in 2018**

Singapore is ramping up efforts to tackle climate change on a new frontier: changing public perception. On what this would entail, the Ministry of the Environment and Water Resources (MEWR) commented that there will be outreach and education efforts to 'bring into the national consciousness the impact of climate change and the urgency of reducing our carbon footprint to build a sustainable future for generations to come'.

Climate change campaigns will supplement the government's existing suite of strategies, including subsidies pumped into research for clean energy innovations. In particular, the government is banking on solar power to reduce the country's reliance on natural gas and has invested in ways to better harness energy from the sun, by piloting floating solar systems, for example.

Source: *The Straits Times*, 18 November 2017

#### **Extract 5: Forecast for Singapore's 2019 economic growth cut**

The International Monetary Fund (IMF) has trimmed its 2019 economic growth forecast for Singapore from 2.3 percent to 2 percent, as global trade tensions hit exports from the country. Singapore's economy grew just 0.1 percent in the second quarter, its slowest annual pace in a decade, raising bets of a recession and monetary policy easing. Singapore's central bank, Monetary Authority of Singapore (MAS), forecasts growth this year to be between 1.5 percent and 2.5 percent, down from 3.2 percent in 2018.

Source: *The Straits Times*, 16 July 2019

### Questions

- (a) (i) With reference to Extract 1 and using DD/SS analysis, account for the sharp fall in the price of renewable energy. [3]
- (ii) With reference to Table 1 and the information provided, consider whether the falling price of renewable energy would shift the composition of Singapore's fuel sources away from natural gas. [6]
- (b) With reference to Figure 1 and 2, explain **one** reason for the observed difference in the global ranking positions of Singapore's carbon emissions. [2]
- (c) With the help of a diagram and using examples from the extracts, explain why, left to market forces alone, production **or** consumption decisions may bring about market failure. [7]
- (d) The Singapore government is implementing an initial carbon tax of \$5 per tonne of emissions from 2019 to 2023, with plans to raise this rate by 2030.
- Explain **two** possible constraints faced by businesses in responding to the Singapore government's decision to impose a carbon tax. [6]
- (e) While the carbon tax is taking effect in 2019, some economists are anticipating Singapore to slip into a recession.
- Discuss the combined impact of these two events on the markets of different goods and services such as necessities and luxuries. [9]
- (f) Discuss whether carbon tax is more effective than government spending on Research and Development (R&D) in reducing carbon emissions. [12]

[Total: 45]

[Turn over

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## Question 2: Inflation and Labour Market Issues in the UK and Singapore

**Table 2: Selected Indicators for the UK**

	2013	2014	2015	2016	2017
GDP annual growth rate (%)	2.0	2.9	2.3	1.8	1.8
Rate of unemployment (%)	7.5	6.1	5.3	4.8	4.3
Annual rate of inflation (%)	2.3	1.5	0.4	1.0	2.6
Nominal wage growth (%)	4.1	3.3	3.6	3.3	3.9

Sources: World Bank, Office for National Statistics UK

**Table 3: Selected Indicators for Singapore**

	2013	2014	2015	2016	2017
GDP annual growth rate (%)	4.8	4.0	2.9	3.0	3.7
Rate of unemployment (%)	3.9	3.7	3.8	4.1	3.9
Annual rate of inflation (%)	2.4	1.0	-0.5	-0.5	0.6
Nominal wage growth (%)	5.3	4.9	4.9	3.1	3.8

Sources: World Bank, Ministry of Manpower Singapore

### Extract 6: UK inflation rises to 1.8% spurred by weak pound and rising fuel costs

The economy has grown over the last two years in response to a surge in consumer spending, fuelled largely by an increase in credit. However, a surge in fuel prices helped push inflation to its highest level for more than two years last month.

Economists said inflation would rise further this year. Fuelling the rise is the pound's sharp fall since the Brexit vote, which makes imports to the UK more expensive, and also the rise in oil prices on the back of lower production. Data published alongside the inflation figures showed manufacturers' fuel and material costs were rising at the fastest pace for more than eight years.

Economists have warned rising inflation this year risks squeezing household incomes if wages fail to keep pace. Figures due on Wednesday are forecast to show underlying earnings growth held at 2.7% in the three months to December. But firms may be unwilling to keep raising pay as they grapple with higher costs and uncertainty about the future as Brexit negotiations unfold.

Responding to news of another rise in inflation, a spokesman for the Treasury<sup>1</sup> noted that earnings were still rising faster than inflation and had done so for more than two years. The government is also planning to cut taxes for millions of working people and freeze fuel duty, saving an average driver £130 a year.

Source: *The Guardian*, 15 Feb 2017

<sup>1</sup> The Treasury is the British government department responsible for developing and executing the government's public finance policy and economic policy.

### **Extract 7: UK wage growth hit by higher inflation**

Official figures show that the amount of money workers are taking home continues to fall as inflation takes its toll. Average earnings fell in real terms by 0.6% in the three months to April, compared with the same period last year.

Unemployment fell by 50,000 to 1.53 million in the three months to April - the lowest since records began in 1975. The number of people in work hit a new high of 74.8% - the best since records began in 1971. But the biggest issue will be the falling wages, especially since inflation rose to 2.9% in May.

Following traditional economic modelling, high levels of economic growth should, in ordinary times, lead to higher wages. However, these are not ordinary times. The workplace has changed, and high levels of hyper-flexible working have tended to depress some wages.

Add to that the UK's chronic productivity problem - many firms are just not very good at investing in improvements that increase levels of wealth creation - and this soft wage growth trend is to be expected.

Britain's productivity crisis risks getting worse because the population is ageing steadily, leaving relatively fewer younger, more dynamic workers who typically innovate more. Unless drastic action is taken to boost skills and creativity, or to increase the number of young workers, growth will struggle to pick up, according to new economic research published in the journal of the National Institute of Economic and Social Research.

Sources: *BBC*, June 2017,  
and *The Telegraph*, August 2017

### **Extract 8: Bank of England poised to push interest rates back up to 0.5%**

The Bank of England is poised to raise interest rates for the first time in more than a decade, raising the cost of borrowing for British households already hurt by an earnings squeeze.

The government is expected to reverse emergency action taken following the EU referendum, when it cut rates from 0.5% to 0.25% to avert a recession. While a slump has not materialised, the British economy appears in worse health than most other major countries with potential to be blown further off course by faltering talks to leave the EU.

The UK is growing at half the rate recorded in the US for the year to September, at 1.5%, while growth is expected to trail Italy, France and Germany next year.

While increasing borrowing costs could hurt squeezed households, it will support the strength of the pound and help to cut inflation, which reached 3% in September and is expected to rise further still, driven by the higher cost of importing food and fuel.

Source: *The Guardian*, October 2017

### **Extract 9: Singapore faces double whammy in labour supply**

Singapore has the most to fear from an ageing population among Asia-Pacific nations, according to a new study. It noted yesterday that the country faces a double whammy: a shrinking workforce coupled with slower progress than its Asian neighbours in getting more people into the labour market.

The report by Oxford Economics said Singapore's labour supply will shrink by 1.7 percentage points in the 10 years through 2026, and by 2.5 percentage points in the following decade. The report said almost all Asian nations will face demographic challenges over the next two decades, and policy measures or efforts to boost labour participation rates - such as by drawing more women or the elderly into the workforce - will only partially limit the impact.

The report added that the massive decline expected in Singapore's working-age population growth from 2027 will be due in part to less immigration after a recent policy shift.

Singapore's ageing population has long been flagged as a major challenge to the economy. It means higher healthcare expenditure and a decline in the domestic labour force, which will affect growth.

However, economists believe Singapore remains attractive as a destination for human capital and businesses, given its status as an international hub for finance, shipping and other activities. It also helps that Singapore has more flexibility in terms of immigration policy compared with other countries in the region.

Source: The Straits Times, September 2017

#### **Extract 10: Singapore's ageing population a ticking 'time bomb'**

Singapore's population will reach a critical juncture next year, as the number of people above 65 will equal those under 15 for the first time in history. Economists warn that the situation is a ticking 'demographic time bomb', with implications on costs, taxes, labour and productivity.

Economists interviewed said that unless the government loosens its grip on immigration, taxes would have to be raised in the near future as a result of the rapidly greying population. The ageing population could prompt the government to look at imposing new taxes on e-commerce transactions for example, and raise the goods and services tax (GST) from the current 7 percent to 9 percent in 2019. The government could also prioritise spending in various areas in order to manage its growing expenditure.

Economists argued that loosening the immigration policy is necessary to cushion the adverse effects of a greying population. Raising the intake of working-age foreigners will help increase growth and fiscal revenue, and reduce the tax burden on younger Singaporeans.

However, after years of surging foreign manpower growth, the Singapore government has — since 2011 — moved to tighten the inflow of immigrants in its bid to reduce reliance on low-cost foreign labour. This ensures continued productivity growth in the economy. The government has made clear on several occasions that it will not perform a U-turn on its stance.

Still, some economists have said it may be time to re-look these policies, although they have cautioned that this must be done in a politically sensitive manner. Singaporeans will have to make the choice — they either pay higher taxes if they want a smaller pool of immigrants or pay lower taxes and open the doors to immigrants.

Source: *Today Online*, February 2017

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**Questions**

- (a) Describe the trend in Singapore's general price level from 2013 to 2017. [2]
- (b) (i) Account for the change in UK's inflation rate from 2015 to 2017. [4]
- (ii) Comment on the impact that higher inflation rates may have on the standard of living of UK citizens. [6]
- (c) (i) Compare the change in nominal wage growth for the UK and for Singapore from 2013 to 2017. [2]
- (ii) Extract 7 states that 'high levels of economic growth should, in ordinary times, lead to higher wages'.
- Using a demand and supply diagram, explain this statement. [4]
- (d) With reference to Extract 8, explain why the UK government is 'poised to raise interest rates' and comment on whether the outcome will be desirable. [9]
- (e) (i) Using AD and AS analysis, explain how an ageing population may harm Singapore's economic growth in the short and long run. [6]
- (ii) Discuss if loosening immigration policy is the best approach to deal with the challenges arising from an ageing population. [12]

[Total: 45]



## Suggested Answers to ACJC 2019 H1 Economics Prelim Case Study Question 1

(a)(i) With reference to Extract 1 and using DD/SS analysis, account for the sharp fall in the price of renewable energy. [3]

- Extract 1 mentions that there has been continuous technological advances achieved in the field of renewable energy technologies.
- The advances could bring about cost savings in the production of renewable energy, thus increasing supply of renewable energy.
- Price of renewable energy fell sharply as demand could be price inelastic, due to firms not seeing renewable energy as a close substitute to fossil fuel, hence requiring a large fall in price to clear the surplus of renewable energy at the original price.

(a)(ii) With reference to Table 1 and the information provided, consider whether the falling price of renewable energy would shift the composition of Singapore's fuel sources away from natural gas. [6]

- Table 1 shows natural gas being the main source of fuel for electricity generation in both 2005 and 2017, with an increase of nearly 20% in the period.
- Argument for:
  - Renewable energy and natural gas are **substitutes**.
  - The falling price of renewable energy would lead to a rise in quantity demanded for renewable energy, causing consumers to switch from natural gas to renewable energy → **fall in demand for natural gas** → shifts the composition of Singapore's fuel sources away from natural gas → allows firms and households to enjoy lower cost of production and prices respectively → improvement in SOL.
- Argument against:
  - However, Extract 1 suggests that there are challenges faced in switching over to renewable energy → **reducing the extent to which demand for natural gas would fall** → example of challenges: storage problems, intermittency and uncertainties in weather conditions.
  - The challenges would thus cause the demand for renewable energy to be **price inelastic** → **renewable energy and fossil fuel are not close substitutes** → hence, a fall in the price of renewable energy would only bring about a less than proportionate increase in quantity demanded, ceteris paribus.
- Overall considered judgement:
  - Given that natural gas is now the main source of fuel in Singapore, it suggests that the government has allocated a lot of resources into building the infrastructure needed for transmission of natural gas → examples of infrastructure: liquefied natural gas terminals and pipe lines. New resources will be needed if a switch away from natural gas is needed. The opportunity cost of this additional spending might be too high for the government.

- Furthermore, as mentioned in **Extract 2**, despite not being renewable, natural gas is already perceived to be cleaner compared to fossil fuel, hence reducing the urgency in switching to renewable energy.
- **Overall, the composition of Singapore's fuel sources may not shift away from natural gas in the short run although this might happen in the long run if the price of renewable energy continues to fall significantly such that the cost savings reaped by the power generation companies outweigh the high cost incurred from storage and intermittency in supply (making renewable energy a less viable alternative for power generation companies that have all along been using natural gas).**

<b>Level</b>	<b>Knowledge, Application, Understanding, Analysis</b>	<b>Marks</b>
<i>L2</i>	<ul style="list-style-type: none"> <li>• <i>Conceptually accurate and well-explained economic analysis that is balanced → 6 marks reserved for answers that made use of either <math>PED &lt; 1</math> or fall in DD as economic analysis</i></li> <li>• <i>Developed one-sided analysis to be capped at 4 marks</i></li> <li>• <i>Good use of Table 1 and case information provided</i></li> </ul>	<i>4 - 6</i>
<i>L1</i>	<ul style="list-style-type: none"> <li>• <i>Does not address question</i></li> <li>• <i>Largely descriptive answer with limited economic analysis</i></li> <li>• <i>Limited use of Table 1 and case information provided</i></li> <li>• <i>Conceptual inaccuracies and / or errors present</i></li> </ul>	<i>1 - 3</i>

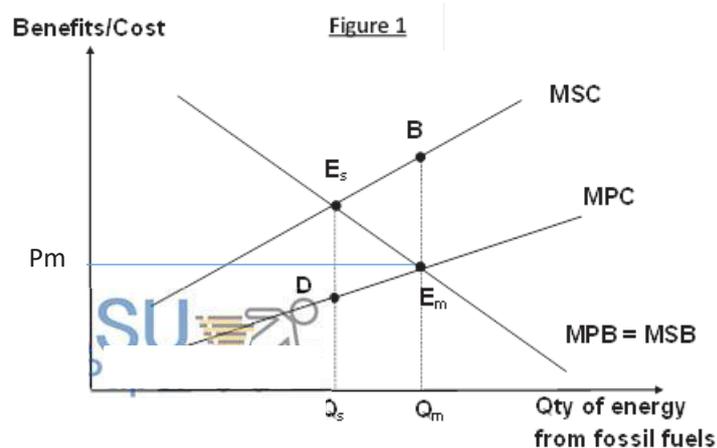
**(b) With reference to Figure 1 and 2, explain one reason for the observed [2] difference in the global ranking positions of Singapore's carbon emissions.**

- SG has a relatively high 26<sup>th</sup> ranking position for its global carbon emissions per capita while that of its global carbon emissions per US\$GDP is relatively low at 123<sup>rd</sup> ranking position.
- This could be due to the fact that SG's US\$GDP is proportionally much larger than her population size (i.e. when compared to countries of the same population size, SG's US\$GDP is much larger).

**(c) With the help of a diagram and examples from the extracts, explain why, [7] left to market forces alone, production or consumption decisions may bring about market failure.**

- Market forces fail to allocate resources efficiently when producers or consumers do not factor in the external benefit and cost to third parties or if their decisions are made with inadequate information, thus not maximizing society's welfare.

- **Extract 2** mentions that the bulk of greenhouse gases generated is due to the burning of fossil fuels to generate energy for industries, buildings, households and transportation.
- **Recognising that market decisions are guided by the pursuit of self-interest:** Consumers seeking to maximise satisfaction will only consider their private costs (e.g. electricity bills) and private benefits (e.g. satisfaction gained from using the air-conditioner) while neglecting the impact of their decisions on others or the rest of society. As shown in Figure 1, the market output (where  $MPC = MPB$ ) occurs at  $Q_m$ .
- **Explaining negative externalities arising from energy production:** However, external costs are imposed on third parties who are not directly involved in the production activity and do not receive compensation for the negative impact. In this case, breathing in polluted air can lead to respiratory health illnesses, causing third parties (e.g. residents living near power generation plants) to incur medical costs or suffer a loss in income when they take time off from work.
- **Explaining  $MSC > MPC$ :** The **true cost** of energy consumption is the **social cost**, comprising both the **private cost** and the **external cost**. Due to the presence of negative externalities,  $MSC > MPC$ .
- **Explaining  $Q_m > Q_s$ :** The socially optimal output (where  $MSB = MSC$ ) occurs at  $Q_s$ , consumers' pursuit of self-interest has resulted in the overconsumption of energy produced by burning fossil fuels ( $Q_m - Q_s$  units).
- **Explaining welfare / deadweight loss:** As shown in Figure 1, for any quantity above  $Q_s$ ,  $MSC$  is greater than  $MSB$ , implying that there is a net cost incurred by the society when the market consumes above  $Q_s$ . Thus, the welfare loss is shown by the area  $BE_sE_m$ .
- **Linking market failure to resource allocation:** To subsidise treatments related to the respiratory health illnesses, additional government resources that could have been used for other purposes are now channelled into healthcare sectors. **Underpricing of energy generated by burning fossil fuels ( $P_m$ ) has thus led to an overallocation of resources in the market.**



1 m – correctly drawn Diagram

Level	Knowledge, Application, Understanding, Analysis	Marks
L2	<ul style="list-style-type: none"> <li>Conceptually accurate and well-explained economic analysis</li> <li>Accurate and effective use of diagram and examples from the case</li> <li>6 marks reserved for answers that are able to relate to welfare loss or the concept of efficiency → answer addresses the question: market fails on what sense?</li> </ul>	4 - 6
L1	<ul style="list-style-type: none"> <li>Does not address the question</li> <li>Largely descriptive answer with limited economic analysis</li> <li>May not use examples from the case</li> <li>Conceptual inaccuracies and/or errors present → e.g. identifying renewable energy as a merit good</li> </ul>	1 - 3

- (d) The Singapore government is implementing an initial carbon tax of \$5 per tonne of emissions from 2019 to 2023, with plans to raise this rate by 2030. [6]

Explain two possible constraints faced by businesses in responding to the Singapore government's decision to impose a carbon tax.

- Identification of impact:** The carbon tax will cause firms to face a higher cost of production which could cause profit to fall (if revenue is unable to counter the higher cost).
- In response to the Singapore government's decision to impose a carbon tax, firms can choose to respond in the following three ways:

Possible Responses	Constraints
Pass on the higher cost of production to consumers	<ul style="list-style-type: none"> <li><u>Price elasticity of demand</u> (define and briefly explain): the more price elastic the demand, the more responsive the consumers, the less able the firms are in passing on the higher cost of production to consumers in the form of higher prices.</li> </ul>
Switch to the use of alternative energy sources such as renewable energy	<ul style="list-style-type: none"> <li><u>Financial resources:</u> needed to put in place the necessary systems, conditions and infrastructures required which will cause firms to incur a high set-up cost.</li> </ul>
Make changes to production methods so as to reduce carbon emissions	<ul style="list-style-type: none"> <li><u>Financial resources, time and level of technology:</u> needed to conduct Research &amp; Development which requires substantial financial resources (even more so if the government does not provide subsidies) and time for results to be seen.</li> </ul>

- (e) While the carbon tax is taking effect in 2019, some economists are [9] anticipating Singapore to slip into a recession.

Discuss the combined impact of these two events on the markets of different goods and services such as necessities and luxuries.

**Question approach:**

- Explain the effects of the two events (carbon tax and anticipation of an impending recession) on the equilibrium price and quantity of different goods and services such as necessities and luxuries, using supply and demand analysis.
- Discuss how the impact of carbon tax differs, by taking into account the consumers' PED for different goods and services.
- Discuss how the impact of an impending recession differs, depending on the nature of the good.
- Combining analysis of the two events on the markets of different goods and services.

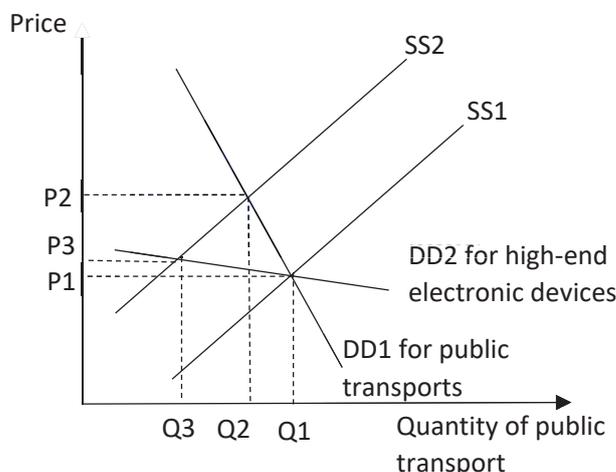
**Introduction:**

- The imposition of carbon tax will cause a fall in supply due to the higher cost of production experienced by firms.
- On the other hand, the impending recession will cause a fall in demand for most goods and services due to the fall in economic confidence and households' disposable income.

**1. The effect of the carbon tax on equilibrium price/quantity of different goods and services depends on the price elasticity of the demand of the good.**

- Comparing the Price Elasticity of Demand (PED) of necessities and luxuries: The demand for necessities such as public transport tends to be **price inelastic**, due to the lack of close substitutes. On the other hand, the demand for luxury goods such as high-end electronic goods that include smart TVs, smart phones and large high-definition computer screens, are generally **price elastic**, given that the spending on such luxury items tend to take up a larger proportion of the households' income.

Figure 1: Market for public transport



- Comparing the impact of carbon tax on the necessities and luxuries: With reference to Figures 1 and 2 above, **the carbon tax has increased the prices of both necessities (e.g. public transport) and luxuries (e.g. high-end electronic devices) but the price of necessities has increased more from  $P_1$  to  $P_2$  compared to that of luxuries from  $P_1$  to  $P_3$ .** This is because consumers who face a higher price in public transport may not have other close alternatives to choose from, leading to them still be willing and able to pay for the higher public transport fares. This is different for consumers of high end electronic devices, who can easily switch away from consuming them to consuming lower-end electronic devices which fulfill the same functions.

## **2. The effect of the impending recession on equilibrium price/quantity of different goods and services depends on the nature of the good.**

- Comparing the extent of the decrease in demand for necessities and luxuries: In view of an impending recession, the fall in economic confidence and possible fall in households' disposable income would cause households to cut back on the demand of **normal goods** which include both necessities and luxuries. **The reduction in demand for luxuries such as high-end electronic devices will be larger compared to the reduction in demand for necessities such as public transport as luxuries are not essential for survival unlike necessities.**
- Hence, the equilibrium price and quantity of luxuries will decrease by a larger extent compared to that of necessities.

## **3. Examining the combined effect of the carbon tax and impending recession on the markets of different goods and services.**

- In the markets for necessities, the simultaneous decrease in demand and supply will cause a decrease in equilibrium quantity. If the decrease in supply is smaller than the decrease in demand, equilibrium price will fall but if the decrease in supply is greater than the decrease in demand, equilibrium price will increase.
- Similarly, in the markets for luxuries, the simultaneous decrease in demand and supply will cause a decrease in equilibrium quantity. The impact on equilibrium price depends on whether the decrease in supply is greater or smaller than the decrease in demand.

### **Synthesis:**

- For necessities with  $PED < 1$  and  $PED < PES$ , a larger portion of the tax (same tax amount for luxuries) would be passed onto the consumers who are less price-sensitive compared to the consumers in the luxuries market where  $PED > 1$  and  $PED > PES$ . Hence, the equilibrium price of necessities will increase by a greater extent compared to that of luxuries.
- Although the demand for both luxuries and necessities are falling, the greater decrease in demand for luxuries will cause equilibrium price to decrease more than that of necessities.

- For necessities, equilibrium price is likely to increase overall → firms would want to pass on more of the tax so that the revenue gained can help to compensate the decrease in revenue due to the impending recession → decrease in DD < decrease in SS
- For luxuries, equilibrium price is likely to decrease overall → firms know that passing on more of the tax will cause revenue to decrease even more on top of the revenue that is already decreasing because of the impending recession → decrease in DD > decrease in SS (given PED >1 and PED > PES).

<b>Level</b>	<b>Knowledge, Application, Understanding, Analysis</b>	<b>Marks</b>
L3	<ul style="list-style-type: none"> <li>• Well-developed explanation of the two events on the markets of different goods and services, with good use of relevant conceptual knowledge (DD, SS, PED).</li> </ul>	5-6
L2	<ul style="list-style-type: none"> <li>• An answer that explains the effect of the two events on different goods and services but not well-developed OR</li> <li>• An answer that only explains the effect of one event.</li> </ul>	3-4
L1	<ul style="list-style-type: none"> <li>• Superficial answer without use of economic concepts or with serious conceptual errors.</li> </ul>	1-2
<b>Level</b>	<b>Evaluation</b>	<b>Marks</b>
E2	<ul style="list-style-type: none"> <li>• Evaluating the combined impact of the two events on equilibrium price and quantity in different markets, with clear explanation.</li> <li>• Providing a considered overall judgement.</li> </ul>	2-3
E1	<ul style="list-style-type: none"> <li>• Stating of simplistic evaluative statements.</li> <li>• No judgement provided.</li> </ul>	1

- (f) **Discuss whether carbon tax is more effective than the government spending on Research and Development (R&D) in reducing carbon emissions. [12]**

**Question approach:**

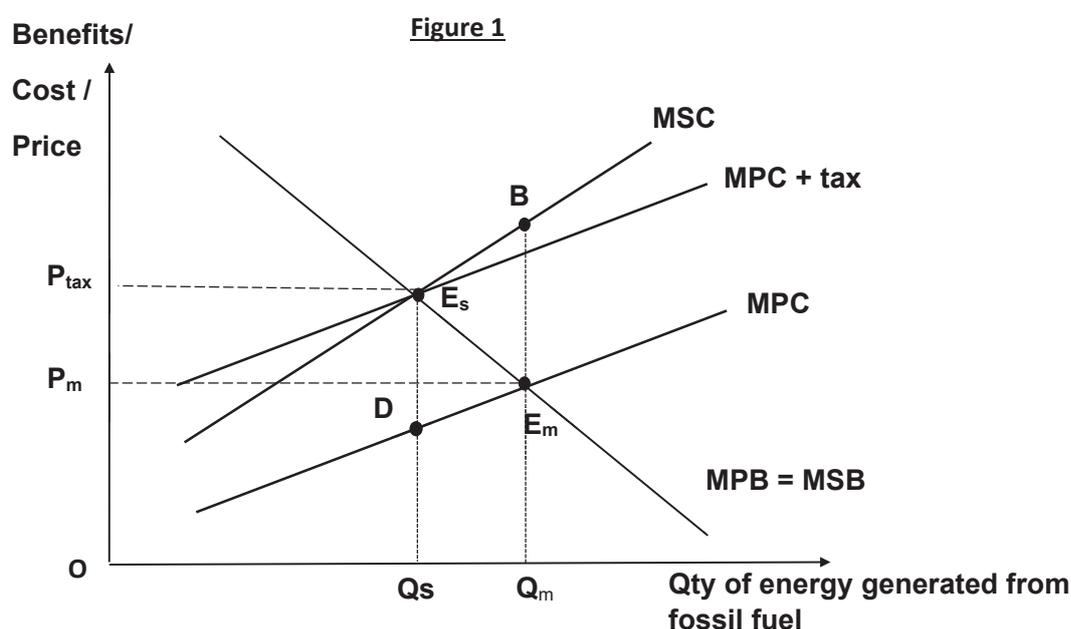
- Explain how the two policies help in reducing carbon emissions, using relevant economic analysis and case information.
- Compare their relative effectiveness using relevant criteria.

**Introduction**

- To correct the market failure caused by the production of energy, the government can either impose a carbon tax or spend on Research and Development (R&D) to reduce carbon emissions.
- These policies are aimed at reducing the output of energy generated by burning fossil fuels from  $Q_m$  to  $Q_s$ .

**1. Carbon tax can help to reduce overconsumption of fossil fuels by forcing consumers to internalize the external cost in their private cost valuation.**

- Imposing a carbon tax forces consumers to include the marginal external cost (MEC) of using energy generated by burning fossil fuels in their marginal private cost (MPC) valuation. This increases the MPC by the tax amount determined by MEC at  $Q_s$ , as shown by the leftward shift of the MPC curve from MPC to  $MPC_t$  in Figure 1 below.
- As a result, the price of using energy generated by burning fossil fuels increases from  $P_m$  to  $P_{tax}$ , resulting in a reduction in output from  $Q_m$  to  $Q_s$  which is the socially optimal output level.



**2. Governments should also consider spending on Research and Development (R&D) on renewable energy so as to encourage more consumers to switch away from using energy generated by burning fossil fuels.**

- **Extract 1** mentions that there are still several challenges faced by firms and countries in switching from fossil fuels to renewable energy; such as storage and intermittency problems. Government spending on R&D is thus needed to resolve such challenges.
- **Successful overcoming of these challenges will increase the degree of substitution between fossil fuels and renewable energy, thus reducing the demand / MPB for energy gained from burning fossil fuel**, achieving the socially optimal output level  $Q_s$ .
- Examples of government spending on R&D can be found in **Extract 3**, where the Singapore government directly subsidizes companies undertaking energy efficiency investments via subsidy schemes such as the Productivity grant (Energy Efficiency) and the Energy Efficiency Fund (E2F). In **Extract 4**, the Singapore government is also subsidizing the development of a more efficient solar energy harnessing system.

### 3. Weighing the relative effectiveness of the two policies:

- Government spending on R&D could be more effective under these conditions:
  - **If the demand for the energy generated from burning fossil fuel is price inelastic due to the lack of substitutes that are low-cost and viable** → power generation companies will still be willing to pay for the higher-priced energy generated from burning fossil fuels, causing the reduction in output to be insignificant, thus not achieving a complete reduction of output from  $Q_m$  to  $Q_s$ .
  - **If the government has concerns about the negative impact of a carbon tax** → such concerns can cause the government to impose a lower-than-required tax rate, hence not achieving  $Q_s$  → **Extract 3** mentions that the Singapore government is currently imposing a \$5 per tonne of emissions from 2019 to 2023 due to concerns over how the carbon tax would negatively impact equity and the country's economic competitiveness.
- Carbon tax could be more effective under these conditions:
  - **For countries that lack the substantial financial resources needed to finance government spending on R&D** → carbon tax is able to achieve  $Q_s$  without the government having to strain its budget unlike in the case of government spending on R&D which requires huge amount of financial resources to achieve the same output level  $Q_s$ .
  - **If the external cost is very large, prompting the need for the government to adopt a fast solution** → carbon tax will indeed be able to achieve a within a shorter period of time compared to government spending on R&D which will require a long period of time for results to be seen.
  - **If the country lacks the weather conditions and infrastructure needed to harness renewable energy** → this means that even if R&D done by other countries is successful, the country is not able to effectively reduce output to  $Q_s$  unless the weather conditions and infrastructural needs are addressed.

**Synthesis: Coming to a well-reasoned conclusion on the relative effectiveness of the two policies.**

- **The demand for energy is projected to increase further in Singapore, due to rising affluence and an increase in economic activities. Therefore, as long as the demand for energy generated from burning fossil fuel remains price inelastic, the carbon tax alone will not be able to achieve a complete reduction of output from  $Q_m$  to  $Q_s$ . Government spending on R&D is thus needed to encourage more power generation companies to switch to the use of renewable energy which serves as a low-cost and viable substitute.**
- **Government spending on R&D to reduce carbon emissions need not be restricted to renewable energy.** In fact, it can include environmentally friendly / fossil fuel efficient technology to generate energy where lesser fossil fuel is used.
- **That said, unlike carbon tax, government spending on R&D does not force power generation companies to internalise the external cost in their private cost valuation.**

Although R&D can help to make renewable energy cheaper and less intermittent, power generation companies may still continue to use energy generated from burning fossil fuel as long as its price is not increased to significantly exceed the price of renewable energy. This suggests that carbon tax is necessary to be implemented alongside government spending on R&D. Carbon tax can also help to generate tax revenue needed to finance government spending on R&D.

- **Therefore, there are various conditions that will make each of the two policies more effective than the other.** To effectively achieve Qs, the government should adopt both policies instead of choosing only one policy.

<i>Knowledge, Understanding, Application and Analysis</i>		
<i>Level</i>	<i>Descriptors</i>	<i>Marks</i>
<i>L3</i>	<ul style="list-style-type: none"> <li>• <i>For an answer that is conceptually accurate and well-developed in discussing both policies with a clear comparison of their relative effectiveness using relevant evaluation criteria / angles.</i></li> <li>• <i>Well supported with relevant case evidence.</i></li> </ul>	<i>7-9</i>
<i>L2</i>	<ul style="list-style-type: none"> <li>• <i>For an answer that has explained how both policies work but undeveloped / with no attempts made in comparing their relative effectiveness.</i></li> <li>• <i>Limited use of case evidence.</i></li> </ul>	<i>4-6</i>
<i>L1</i>	<ul style="list-style-type: none"> <li>• <i>Superficial answer without use of economic concepts or with serious conceptual errors.</i></li> <li>• <i>Answer does not show understanding of question requirements.</i></li> </ul>	<i>1-3</i>
<i>Level</i>	<i>Evaluation</i>	<i>Marks</i>
<i>E2</i>	<ul style="list-style-type: none"> <li>• <i>Addresses the question.</i></li> <li>• <i>Providing a considered overall judgement.</i></li> </ul>	<i>2-3</i>
<i>E1</i>	<ul style="list-style-type: none"> <li>• <i>Stating of simplistic evaluative statements.</i></li> <li>• <i>Considered overall judgement not provided.</i></li> </ul>	<i>1</i>

## 2019 H1 Case Study Question 2 – Mark Scheme

**(a) Describe the trend in Singapore’s general price level from 2013 to 2017. [2]**

Singapore’s general price level is increasing from 2013 to 2017, except for in 2015 and 2016.

**(b) (i) Account for the change in UK’s inflation rate from 2015 to 2017. [4]**

Inflation has increased from 2015 to 2017.

Possible reasons from Extract 6:

Surge in consumer spending fuelled by an increase in credit

- An increase in credit increases the ability of consumer to purchase big ticket items, resulting in an increase in Consumption Expenditure
- This increase AD, resulting in inflationary pressures if the economy is close to full employment and the economy is close to full capacity.

Increase in fuel/oil prices

- As fuel prices increase, this drives up the cost of production for firms. The extract states that cost of production is rising “at the fastest pace in more than eight years”
- This will decrease the SRAS. Firms pass on the rising costs to consumers, resulting in higher prices and greater inflationary pressure

Fall in the value of the pound

- A weaker pound results in an increase in cost of imports in terms of pounds. This increases the cost of importing raw materials, raising the cost of production for firms.
- This will decrease the SRAS. Firms pass on the rising costs to consumers, resulting in higher prices and greater inflationary pressure.
- Note: Students can also explain depreciation leading to increase in AD and demand pull inflation, however assumptions with regards to PED should be stated to get the full mark.

*Students should explain any 2 factors from the extract*

**(ii) Comment on the impact that higher inflation rates may have on the standard of living of UK citizens. [6]**

Higher inflation rates imply that the general price level and therefore cost of living in the UK is increasing at an increasing rate. This could have an impact on SOL in the UK, where SOL can be measured in both material and non-material terms.

Higher inflation rates may lower the standard of living for UK citizens:

- With higher inflation rates, cost of living increases and this reduces the purchasing power of UK citizens.
- With lower purchasing power, they are less able to buy and consume goods and services.
- With a lower level of consumption, material standard of living falls.
- Higher inflation may also cause growing inequity issues, as the increase in prices is more likely to affect low wage fixed income earners, who spend a larger proportion of their income on necessities.

Higher inflation rates may not lower the standard of living for UK citizens:

- However, purchasing power may not fall, as long as wage growth is able to keep up.
- Based on table 2, nominal wage growth has been exceeding the annual rate of inflation. This shows that wages are rising faster than prices, implying that UK citizens would be able to afford more goods and services rather than less.
- In addition, the government is also planning to cut taxes and freeze fuel duty (extract 6). If the government implements these measures, it would help to counter the effects of rising inflation rates on standard of living.

Overall comment:

- Without government intervention, standard of living may fall for low income households.
- However for the average household, the current level of wage growth is sufficient to exceed the increase in general price level.

Level	Descriptors	Marks
L2	<ul style="list-style-type: none"><li>• A balanced and two sided answer</li><li>• Good use of economic analysis to answer the question</li><li>• Good attempts to apply to the context given/make use of data</li><li>• Appropriate comment made on the impact on SOL</li></ul>	4 – 6
L1	<ul style="list-style-type: none"><li>• Answer may be one sided</li><li>• Lacking in economic analysis, answer is too descriptive</li><li>• Theoretical answers lacking analysis</li></ul>	1 – 3

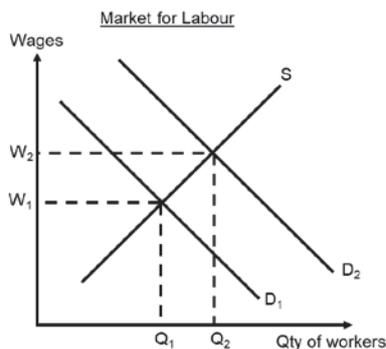
(c) (i) **Compare the change in nominal wage growth for the UK and for Singapore from 2013 to 2017.** [2]

- Nominal wage growth has fallen for both UK and Singapore.
- Singapore's nominal wage growth decreased to a larger extent compared to the UK.

(ii) **Extract 7 states that 'high levels of economic growth should, in ordinary times, lead to higher wages'.**

**Using a demand and supply diagram, explain this statement.** [4]

- When there are high levels of economic growth, there is growing demand for goods and services. Firms increase production to meet the rising demand.
- The demand for labour is a derived demand dependent on the demand for goods and services. As production increases, firms hire more labour to increase production, leading to an increase in demand for labour.
- As demand for labour increases, there is a shortage of labour in the market as quantity demanded exceeds quantity demanded at the initial wage level. Thus there is an upward pressure on wages to clear this shortage.
- Wages will increase from  $W_1$  to  $W_2$  until a new equilibrium is reached.
- Accurately drawn diagram



(d) With reference to Extract 8, explain why the UK government is 'poised to raise interest rates' and comment on whether the outcome will be desirable. [9]

Introduction:

- The objective of raising interest rates is to achieve a low and stable inflation rate.
- However, such a policy may have unintended outcomes on the economy as well.

Raising interest rate helps to address the problem of high inflation:

- UK is having a problem of rising inflation: extract 8 states that inflation is at 3% and is expected to increase further due to higher cost of food and fuel. This could be due to the low value of the pound following the Brexit vote.
- An increase in interest rate would result in an inflow of hot money into the UK economy.
- This increases the demand for pound sterling, resulting in an appreciation.
- A stronger pound will help to reduce the cost of imports in domestic currency, thus lowering the cost of imported raw materials such as food and fuel.
- The lower cost of production therefore increase the SRAS in the UK economy, resulting in less cost of push inflation (decrease in GPL).
- *Note: Students may also explain a reduction in demand pull inflation, but this would not be as well supported with evidence from the extract.*
- A lower inflation rate would be a desirable outcome given the rising inflation rate in the UK.

Raising interest rate may also lead to undesirable effects:

- It raises the cost of borrowing for households, making them less able to purchase big ticket items. Given the existing high level of inflation that reduces their real income, households are likely to be more affected by this. With less ability to purchase these big ticket items, standard of living would fall.
- The extract also states that the UK economy is not doing as well as other economies. This could be due to an uncertain business environment affecting firms' confidence. An increase in interest rate that increases cost of borrowing could further reduce investments and decrease AD, leading to contraction in the economy.

Overall evaluation:

- **Extent of increase in interest rates:** the increase in interest rate is only by 0.25%, so it may not be significant enough to have a large impact. The interest rate was initially reduced from 0.5% to 0.25% to avoid a recession. Since the recession has been avoided, the government should increase it back to its original rate.
- **Root cause of the problem:** one of the root causes of the rising inflation problem in the UK is a weak pound and rising cost of imports. Therefore, increasing interest rate would address this problem and lead to a desirable outcome.

- **Use of other government policies:** The UK government may use other expansionary policies simultaneously to ensure a desirable outcome. For example, a decrease in taxes can help households to maintain their purchasing power even as interest rates increase.

Level	Descriptors	Marks
L2	<ul style="list-style-type: none"> <li>• An answer that explains both sides thoroughly</li> <li>• Good reference to Extract 8 and any of the data given</li> <li>• Strong and accurate economic analysis</li> </ul>	4 – 6
L1	<ul style="list-style-type: none"> <li>• One sided answer</li> <li>• Or two sided answer that is explained superficially</li> <li>• Conceptual errors</li> </ul>	1 – 3
E2	<ul style="list-style-type: none"> <li>• A well-argued and appropriate conclusion based on a well selected criteria.</li> </ul>	2 – 3
E1	<ul style="list-style-type: none"> <li>• An unsubstantiated or generic conclusion</li> </ul>	1

- (e) (i) **Using AD and AS analysis, explain how an ageing population may harm Singapore’s economic growth in the short and long run. [6]**

Short run effects:

On SRAS:

- An ageing population could lead to an increase in healthcare expenditure as mentioned in Extract 9, since the elderly are more likely to experience health related problems.
- In order to finance the increase in healthcare expenditure, the government may impose new taxes such as raising GST or taxing e-commerce transactions.
- Such taxes are imposed on producers, and raise their cost of production, resulting in a fall in the SRAS of the economy.
- This will lead to lower national output and slowdown growth in the short run.

On AD:

- An ageing population could result in falling incomes for the elderly as more workers retire. As disposable income falls, there is a decrease in consumption expenditure.
- In addition, the decline in the domestic labour force could affect business confidence as productivity falls and costs rise. This could lead to a fall in investments.
- The fall in C and I could then result in a fall in AD, leading to lower national output and slowdown growth in the short run.

Long run effect:

On LRAS:

- An ageing population could lead to a shrinking workforce as more workers retire. The number of workers retiring could exceed to number of workers joining the workforce.
- In addition, productivity may be lower as older workers may have skills that are out dated or less relevant to the progressing economy. The quality of workers may fall over time.
- As the government prioritises spending on healthcare over other areas such as building infrastructure, this would also limit the potential growth in the economy.
- Overall, LRAS may fall or remain stagnant, resulting in limited potential growth in the long run.

**(ii) Discuss if loosening immigration policy is the best approach to deal with the challenges arising from an ageing population. [12]**

Introduction: Students should identify the challenges arising from an ageing population.

Challenges arising from an ageing population:

- As mentioned in part (i), an ageing population could result in slow actual and potential growth
- Some specific challenges include lower productivity growth, rising costs, as well as a strain on the government budget due to increased healthcare expenditure and a smaller tax base.

Contextualise:

- Both Singapore and the UK are experiencing an ageing population.
- Singapore has always been relatively reliant on foreign workers, but the government has been trying to reduce reliance in recent years.
- The UK is also experiencing a productivity crisis where the older workers are unable to innovate as well as the younger workers. This has resulted in slow growth in wages.

Thesis: Loosening immigration policy may be the best approach to deal with the challenges arising from an ageing population.

Impact on growth:

- As mentioned in extract 10, loosening immigration policy may be necessary to cushion the adverse effects of a greying population.
- By loosening immigration policy, the supply of workers in the economy would increase, which would result in a downward pressure on wages.
- The lower wages would help to lower the cost of production, resulting in an increase in SRAS and growth in the economy.
- At the same time, the quantity of workers in the economy would increase, resulting in increase in the productive capacity as shown by a rightward shift in the LRAS.
- Thus the economy is able to experience both actual and potential growth.
- As the economy grows, business confidence would also improve, attracting more FDI and increasing investment in the economy.

Impact on budget position:

- Loosening migration policy also allows for a larger tax base, so that burden on the younger Singaporeans will not be so large.
- A larger tax base will increase tax revenue, which can be used to finance the increasing healthcare expenditure resulting from an ageing population.
- Thus, loosening migration policy would improve the government's budget position and is more sustainable in the long run.

Anti-Thesis/Counter argument: Governments should tighten immigration policy instead of loosening it

Impact on productivity:

- Loosening immigration policy could result in lower productivity as the economy becomes over-reliant on low skilled foreign workers.
- With cheap low-skilled labour readily available, firms do not have the incentive to improve productivity, for example through skills training or automation.
- As such, there would be low productivity growth and the LRAS would remain stagnant.
- In addition, this could be a politically sensitive issue. With the large inflow of foreign workers, this could lead to overcrowding as well as other social issues if the foreigners have difficulty integrating into society.

- Because of these reasons, countries like Singapore have tightened immigration policy and are unwilling to reverse this stance.

Anti-Thesis/Counter argument: Governments should adopt other approaches to deal with the challenges arising from an ageing population.

- Instead of loosening immigration policy, the government should focus on improving labour productivity through various policies.
- Extract 7 states that the UK government has to take action to boost skills and creativity. This can be achieved through policies such as skills training and education.
- By subsidising skills training (or re-training for older workers), the quality of labour would improve, resulting in an increase in productive capacity and potential growth in the economy.
- The government could also subsidise or invest in R&D, to encourage firms to adopt a more capital intensive method of production.
- With such measures in place, productivity remains high and cost of production would be lowered even with an ageing population.
- This can be seen from extract 9, which states that Singapore remains an “attractive destination” for investments due to its advancements in industries such as finance and shopping.

Evaluation:

- Loosening immigration policy can help to alleviate the challenges associated with an ageing population, but should only be used in the short run.
- In the long run, over dependence on foreign labour could lead to other social problems and is not a sustainable approach. This is especially true for countries like Singapore where space and resources are already limited.
- As such, governments should tighten immigration policy with regards to low skilled foreign labour, but remain open to inflow of high skilled labour. This will ensure long term productivity growth, while keeping the inflow of labour at a more sustainable rate.
- Economies such as the UK are larger and can also leverage on their larger work force as well.

Level	Descriptors	Marks
L3	<ul style="list-style-type: none"> <li>• Well developed, balanced answer</li> <li>• Good and consistent application to the context given with references made to the data given.</li> <li>• Strong economic analysis used.</li> </ul>	6 – 9
L2	<ul style="list-style-type: none"> <li>• One sided answer or underdeveloped two sided answer</li> <li>• May be purely theoretical and lacking application or reference to the data given</li> <li>• Attempts to use AD/AS analysis, but some conceptual errors present</li> </ul>	3 – 5
L1	<ul style="list-style-type: none"> <li>• Vague, descriptive or list-like answer lacking economic analysis</li> <li>• Many conceptual errors</li> </ul>	1 – 2
E2	<ul style="list-style-type: none"> <li>• A well-argued and appropriate conclusion based on a well selected criteria.</li> </ul>	2 – 3
E1	<ul style="list-style-type: none"> <li>• An unsubstantiated or generic conclusion</li> </ul>	1





**Catholic Junior College**  
**JC2 Preliminary Examinations**  
**Higher 1**

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**ECONOMICS**

**8823/01**

**Paper 1**

**23 Aug 2019**

Additional Materials: Writing Paper

**3 hours**

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**READ THESE INSTRUCTIONS FIRST**

Write your name, class and question number on **all** the work you hand in.

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

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

Do not use highlighters, glue or correction fluid.

**Begin each question on a new sheet of paper.**

Answer **ALL** questions.

At the end of the examination, securely fasten your work for each question separately.

**Submit each question separately.**

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

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

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Answer **all** questions.

### Question 1: Rare Earths Production: China, US and Malaysia

**Figure 1: Forecast Price of Neodymium Oxide (one of the rare earth elements)**



Source: *Statista*, accessed 8 July 2019

#### Extract 1: China rare earths prices soar

Chinese rare earths prices are set to climb further beyond multi-year highs following a flurry of state media reports that Beijing could limit its exports of the prized minerals in its trade war with Washington.

China supplied 80% of the rare earths imported by the United States from 2014 to 2017. It was Beijing's decision almost 30 years ago to make rare earths a strategic material, and to ban foreigners from mining them, that helped pave the way for China to elbow aside the U.S. as the world's leading producer. With China now accounting for 70% of global production, and only one U.S. mine in operation, American industries have "no immediate avenues" to break their reliance on China for supply of rare earths elements, according to Citigroup Inc.

"Magnet-related rare earths are so critical to high-demand, highly-competitive, price-sensitive industries," said Ryan Castilloux, managing director of Adamas Intelligence, a consultancy that tracks rare earths markets. Rare earths, a broad group of 17 elements, are used in everything including consumer products from iPhones to electric and hybrid car motors, and critical military applications, including jet engines, satellites and lasers. The U.S. all but surrendered to China's dominance of the sector.

Rare earths demand is forecast to have increased by 8% in 2018, driven largely by developments in the use of rare earths permanent magnets in automotive and renewable energy generation.

Source: Adapted from *Reuters*, 6 June 2019

### **Extract 2: Production of rare earths in the U.S. and trade war with China**

The U.S. Defense Department is seeking new federal funds to bolster domestic production of rare earths and reduce dependence on China, the Pentagon has said, amid mounting concern in Washington about Beijing's role as a supplier.

In 2018, the U.S. imposed three rounds of tariffs<sup>1</sup> on more than \$250 billion worth of Chinese goods. Beijing retaliated in kind. Tariffs imposed on Chinese goods aim to make U.S.-made products cheaper than imported ones and encourage consumers to buy American. These tariffs are also increasingly seen as a negotiation tactic in the trade war. Both U.S. and international firms have said they are being harmed due to higher costs. The International Monetary Fund warned a full-blown trade war would weaken the global economy.

Sources: Adapted from *BBC News*, 18 Sept 2018 and *The Straits Times*, 30 May 2019

### **Extract 3: Toxic legacy in Malaysia rare earths village**

Thirty years have passed since Japan's Mitsubishi Chemicals opened a rare earths refinery in the Malaysian village of Bukit Merah, but although the plant is gone, its toxic legacy persists. The facility was embraced by authorities as an advanced foreign investment that would help create jobs in poor Perak state in the country's north. But a rise in leukaemia and other health problems has left the site, now abandoned, as a silent warning to Malaysia as it touts a controversial new foreign rare earths plant being built in the country's east by Australia's Lynas Corp.

Residents and activists say the village and surrounding areas have seen increased rates of leukaemia, birth defects, infant deaths, congenital diseases, miscarriages and lead poisoning in the years following the plant's opening.

Mitsubishi Chemicals closed the plant in 1994 after a mounting public outcry, but the government has neither admitted nor denied radiation poisoning in the village. The only payout by the company was a 500,000-ringgit lump sum to the local community to compensate victims living near the plants. A tacit understanding was reached under which Mitsubishi Chemicals would shut the facility in exchange for a suspension of lawsuits.

However, in May 2019, Malaysian Prime Minister Mahathir Mohamad said that Malaysia will allow Australian rare earths producer Lynas Corp to keep operating a processing plant in the country. "We think we'll have to renew the licence," Mahathir told reporters at a news conference in Tokyo, adding Malaysia did not want to lose such a large investment.

Sources: Adapted from *Bangkok Post*, 26 Jun 2012, and *The Straits Times*, 30 May 2019

### **Extract 4: Growth of hybrid cars**

The rising environmental concerns and endeavours directed at reducing carbon footprints have paved the way for the growth of the hybrid vehicle market. It has motivated governments to offer incentives to the manufacturers of vehicles for boosting the production of hybrid cars. A similar trend is expected to be witnessed over the next couple of years, thus, favouring the proliferation of the hybrid vehicle market over 2023.

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<sup>1</sup> Tariffs are taxes on imported goods and services

The scarcity of fossil fuel has also expedited the adoption of hybrid cars as a cost-efficient alternative to conventional vehicles. Hybrid cars affirm profit in the future growth trajectory of the automobile industry. The market is projected to gain traction in the forthcoming years and remains highly lucrative.

To shore up productivity in its manufacturing sector, which makes up less than a quarter of its output, Singapore has focused efforts on attracting high-end manufacturers and those who adopt automated production processes.

British technology company Dyson said on October 2018 that it would build its electric car in Singapore, with a new automotive manufacturing facility set for completion in 2020 ahead of the first vehicle launch a year later.

The electric car plant is part of Dyson's £2.5 billion global investment drive in new technology. Why Singapore? Aside from its skilled engineers and scientists, for a high-tech firm like Dyson, Singapore offers generous incentive schemes. Some schemes include tax breaks for five years, which can be extended, and grants that can cover up to 30 per cent of the cost of projects to improve business efficiency.

Releasing brief details of patents filed 18 months ago ahead of the car's expected launch in 2021, Dyson said in a memo shared with media: "The patents show a car with very large wheels, giving low rolling resistance and high ground clearance." This makes a vehicle suited to city life and rough terrain but could also contribute to increased range and efficiency, he said, cautioning however, that current designs were far from set in stone.

Electric vehicles are increasing in popularity as governments worldwide drive forward plans to gradually phase out polluting petrol and diesel cars.

Sources: *Marketwatch*, 4 Jan 2019, and *Channelnewsasia*, 9 May 2019

### Questions

- (a) With reference to Figure 1, describe the trend in the price of Neodymium Oxide between 2013 and 2019. [2]
- (b) Extract 2 states that the U.S. imposed three rounds of tariffs on more than \$250bn of Chinese goods.  
Explain **two** unintended consequences on the U.S. due to its tariffs on Chinese products. [4]
- (c) Using a demand and supply diagram and a relevant elasticity concept, account for the soaring price of rare earths and comment if the trend is set to continue. [7]
- (d) Using the concepts of price elasticities of demand and supply, discuss whether consumers or producers of electric vehicles are more likely to enjoy a greater share of the subsidy. [8]
- (e) (i) Explain the factors that the Malaysian government should consider in deciding whether to renew the licence of Australian rare earths producer Lynas Corp. [6]
- (ii) Explain why the government may intervene in the market for rare earths metal production to bring about a more efficient allocation of resources. [6]
- (iii) Discuss the view that the '500,000-ringgit lump sum to the local community' is the most appropriate way to improve efficiency in resource allocation in the market for rare earths. [12]

[Total: 45]

## Question 2: Macroeconomic Issues in the U.S. and Singapore

**Table 1: Data on Living Standards for Selected Countries, 2018**

Rank order	Country	Human Development Index (HDI)	GNI per Capita (in USD at PPP)
1	Norway	0.953	68,012
2	Switzerland	0.944	57,625
3	Australia	0.939	43,560
4	Ireland	0.938	53,754
5	Germany	0.936	46,136
6	Iceland	0.935	45,810
7	Hong Kong, China (SAR)	0.933	58,420
7	Sweden	0.933	47,766
9	Singapore	0.932	82,503
10	Netherlands	0.931	47,900

*Note: Table 1 shows the top 10 countries based on HDI, in rank order.*

*Source: Human Development Report Office, accessed 7 July 2019*

### **Extract 5: Unemployment in the U.S.**

U.S. job growth slowed in May and employment gains in the prior two months were not as strong as previously reported, suggesting the labour market was losing momentum despite the unemployment rate falling to a 16-year low of 4.3 percent. Non-farm payrolls only increased 138,000 last month as the manufacturing, government and retail sectors lost jobs, the Labour Department said on Friday. The economy created 66,000 fewer jobs than previously reported in March and April.

Employment outlook is bleak in the U.S. The unemployment rate fell slightly and that was because 429,000 people dropped out of the labour force. Job growth has decelerated from the 181,000 jobs monthly average over the past 12 months as the labour market nears full employment. There is growing anecdotal evidence of companies struggling to find qualified workers. With the reality of Trump providing fiscal stimulus almost gone and the Federal Reserve (Fed) raising interest rate, the job market will be held back.

*Source: Reuters, 2 June 2017*

### **Extract 6: Twin challenges of solving high unemployment and high inflation**

In 1960, the noted U.S. economists Samuelson and Solow made the link between inflation and unemployment quite specific: when unemployment is low, inflation is high, and vice-versa. Intuitively, this makes sense: in a stable world where economic growth is occurring and there are few people unemployed, households' higher buying power will raise the consumption level in the economy, triggering inflation.

For example, China's consumer inflation rate accelerated to 1.9 percent in October from a year earlier, beating market expectations, the National Bureau of Statistics said on Thursday. The consumer price index (CPI) had been expected to rise 1.8 percent on-year compared with an increase of 1.6 percent in September. China's economy recorded better-than-expected growth of nearly 6.9 percent through the first nine months of this year, buoyed largely by a recovery in its manufacturing and industrial sectors thanks to strong government infrastructure spending, a resilient property market and unexpected strength in exports.

What are the policy implications? A continuation of monetary tightening will only serve to slow growth further and put further downward pressure on inflation. One needs to look no further for such evidence than the housing industry where sales have slowed significantly with the small rate hikes the Federal Reserve has enacted to date.

Sources: Adapted from *Forbes*, 5 September 2017 and *CNBC*, 8 November 2017

### **Extract 7: Unemployment in Singapore**

Should Singapore be hit by higher unemployment, it will be because of a shortage of skills — as a result of the widening jobs-skills mismatch — and not a lack of jobs. But the Government is determined not to let it come to pass, Manpower Minister Lim Swee Say said yesterday. “We are not going to allow this to happen to us,” he said.

The prospect of unemployment creeping up as the economy matures has made the headlines in recent weeks, with both Prime Minister Lee Hsien Loong and Manpower Minister Lim previously weighing in on the issue.

To succeed in this journey, the Government will have to help businesses transform faster, and Singaporeans adapt better. Otherwise, “the mismatch between jobs and skills will widen as we run faster,” he said. Mr Lee said the unemployment rate has climbed to 2.3 percent because of economic restructuring, but the figure is low compared with other developed countries. To keep Singapore prospering, the Government will help businesses create new jobs, get displaced workers re-employed and train employees to deepen and broaden their skills in their current roles.

Singapore has in place major national programmes such as the SkillsFuture movement and the Adapt & Grow initiative, which help those without work adapt to changing job demands and acquire the necessary skills to find new jobs. Mr Lim also noted a growing fear around the world that technology may eventually take over more jobs, making many more workers redundant. While intelligent technology will progressively take over many “jobs of today” that can be done cheaper, better and faster with technology, Mr Lim pointed out that technology will concurrently create many “jobs of tomorrow” — ranging from data analytics and cyber security to robotisation engineering, revenue management and innovation development. Some economies will see net job gains, while others will see net job losses.

Source: *Today Online*, 2 May 2017

**Extract 8: MAS maintains a neutral currency stance**

Singapore is the only major economy in the world to use the exchange rate as a tool of monetary policy, guiding the Singdollar higher or lower. Monetary Authority of Singapore (MAS) says the exchange rate is the best tool for a small, open economy like Singapore. It is a more effective way to manage inflation, as much of the country's consumer goods are imported.

Since October 2012, MAS' broad policy stance has been of a "modest and gradual appreciation" of the Singdollar. But on Jan 28, it made an unscheduled move to ease monetary policy, the first since July 2005, after Singapore's economic growth sagged in 2014 to its weakest in five years.

After easing three times between January 2015 and April 2016, the MAS — which uses the exchange rate as its main policy tool rather than interest rates — has stuck to a neutral currency stance in the face of subdued inflation pressure. Inflation in most countries has been surprisingly low despite the pickup in growth, and a key question many central banks are asking themselves is when to begin adjusting policy. Central banks are not seeing strong evidence of the usual transmission from faster economic growth to rising wages and then, to inflation, said Ravi Menon, Managing Director of MAS. Thus, Singapore is taking a neutral stance of zero appreciation for now until there are more changes.

Sources: *The Straits Times*, 13 October 2015 and *Today Online*, 25 October 2017

**Questions**

- (a) (i) Using Table 1, compare the material living standards and overall living standards between Singapore and Hong Kong. [2]
- (ii) Explain possible reasons for the above observations. [4]
- (b) Using Extract 5, account for the change in unemployment rate in the U.S. [3]
- (c) Explain the likely impact of “the reality of Trump providing fiscal stimulus almost gone and the Federal Reserve raising interest rate” on the U.S. economy in both the short-run and the long-run. [6]
- (d) “When unemployment is low, inflation is high, and vice-versa.”  
Using an AD/AS diagram, explain the relationship between inflation and unemployment and comment on the validity of the above statement. [6]
- (e) Extract 7 states that “should Singapore be hit by higher unemployment, it will be because of a shortage of skills.”  
To what extent do you agree with the above statement? [8]
- (f) (i) Explain why Singapore does not use interest rates as an instrument of monetary policy. [4]
- (ii) Singapore adopted a “neutral stance of zero appreciation of the currency”.  
Discuss whether such a policy is the best way for Singapore to achieve the twin objectives of full employment and price stability. [12]

[Total: 45]

**[END OF PAPER]**

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**Catholic Junior College**  
**H1 Economics 8823**  
**2019 JC2 Preliminary Exam**

**Answer Package**

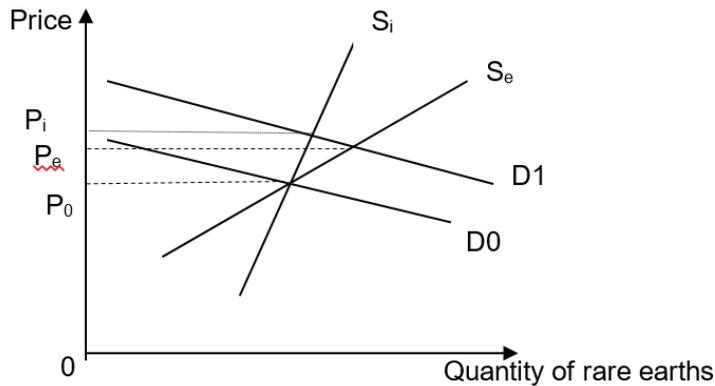
Question 1

(a)	<p><b>With reference to Figure 1, describe the trend in the price of Neodymium Oxide between 2013 and 2019.</b></p>	[2]
	<p>[Overall Trend] World price for Neodymium Oxide is generally increasing [1], with a decrease in 2015 [Refinement]. [1]</p> <p><i>Also accepted if students wrote that the sharpest increase is from 2015-2016. [1]</i></p>	
(b)	<p><b>Extract 2 states that the U.S. imposed three rounds of tariffs on more than \$250bn of Chinese goods.</b></p> <p><b>Explain two unintended consequences on the U.S. due to its tariffs on Chinese products.</b></p>	[4]
	<p>In Extract 2, 'U.S. and international firms have said they are being harmed'.</p> <p><b>1. Unintended consequence for US producers:</b>          U.S. producers have to import raw materials from China. Since tariffs are imposed on China → it is more expensive to buy imported goods from China → leading to a higher COP (Extract 2) for the U.S. producers → lowering profitability for U.S. producers. [2]</p> <p><b>2. Unintended consequence for export-producing firms/the economy</b>          The U.S. imposes tariffs on Chinese products → China retaliates (Extract 2) and imposes tariffs on U.S. products.  <math>P_x</math> increases due to tariffs → <math>PED_x &gt; 1</math>, Qty dd of X decreases more than proportionately (assuming <math>PED_x &gt; 1</math>) → TR decreases → <b>Firms' profits decrease</b> (since Profit = TR – Total Cost) [2]</p> <p>Or</p> <p>(Alternatively, students can link the fall in the export revenue of U.S. to a fall in AD and a fall in the RNY → Fall in actual growth for the U.S.) [2]</p> <p><b>2 marks for each unintended consequence, with elaboration.</b></p>	
(c)	<p><b>Using a demand and supply diagram and a relevant elasticity concept, account for the soaring price of rare earths and comment if the trend is set to continue.</b></p>	[7]
	<p><b>“Account for”:</b></p> <p><b>Approach 1:</b> SS of rare earths decreases (due to exports limit by China), <math>PED &lt; 1</math>, (Determinant of PED: lack of <u>substitutes</u> for rare earths, rare earths are needed to produce various consumer goods as illustrated in Extract 1) → explain the soaring price of rare earths via a diagram</p> <ul style="list-style-type: none"> <li>Compare the change in price when <math>PED &lt; 1</math> vs <math>PED &gt; 1</math>, with a given fall in supply</li> </ul> <p><b>Approach 2:</b> DD of rare earths increase (due to higher <u>derived demand</u> – use of rare earth permanent magnets in automotive and renewable energy generation - Extract 1), <math>PES &lt; 1</math></p> <ul style="list-style-type: none"> <li>Compare the change in price when <math>PES &lt; 1</math> vs <math>PES &gt; 1</math>, with a given increase in demand</li> </ul> <p><b><u>P1: The concept of PES can account for the soaring prices of rare earths:</u></b></p>	

DD of rare earths increase due to developments in the use of rare earths permanent magnets in automotives and renewable energy generation. Hence there is a **rise in derived demand** for rare earths. From Extract 1, Rare earths demand is forecast to have increased by 8% in 2018.

Supply is price inelastic ( $PES < 1$ ) in the SR due to **factor immobility** – it is difficult to switch factors of production to produce rare earths in the short run.

Draw  $PES < 1$  and  $PES > 1$  and illustrate that since  $PES < 1$  in the SR, accounting for the soaring price of rare earths. (from  $P_0$  to  $P_1$  relative to the  $PES > 1$  whereby price change is less significant from  $P_0$  to  $P_e$ )



**Comment: [3]**

**However, the concept of PES may not account for the soaring price to continue or other factors may cause the price of rare earths to dip:**

$PES > 1$  in the LR due to greater factor mobility:

Or

Greater production of rare earths by other countries → (“The U.S. Defense Department is seeking new federal funds to bolster domestic production” → **SS of rare earths increases** → prices of rare earths might fall.

(Students can get the full 3m just by presenting this POV)

**EV: Make a stand and justify**

In conclusion, prices are still likely to increase because China produces most of the rare earths, and according to figure 1; prices of the rare earth elements are expected to increase further. Additionally, the trade war between China and the U.S. seems to be intensifying and China might further limit its exports, resulting in higher prices.

**Mark scheme:**

Level	Descriptors	Marks
L2	An answer that clearly explains with an economic framework on how PES/PED may account for the soaring price of rare earths.	3-4
L1	A descriptive answer with multiple basic conceptual errors on how PES/PED may account for the soaring price of rare earths.	1-2

**Evaluative comment**

Up to 3 further marks for an evaluative appraisal of possibly which factor is the main factor

(d) **Using the concepts of price elasticities of demand and supply, discuss whether consumers or producers of electric vehicles are more likely to enjoy a greater share of the subsidy.** [8]

With a government subsidy to promote the use of electric vehicles, this would lower the cost of production, resulting in a rightward shift of supply, reducing the price of electric vehicles.

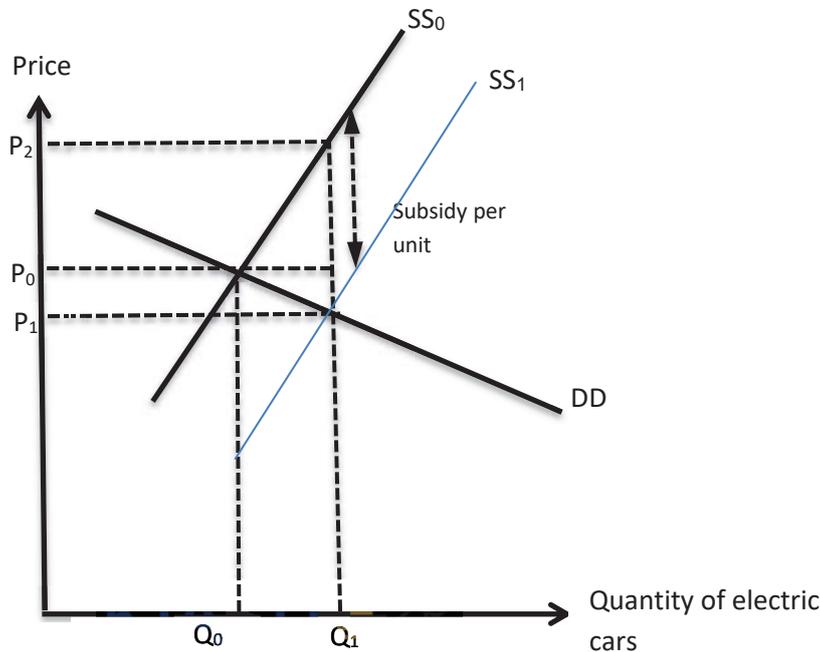
Whether consumers or producers are more likely to enjoy a greater share of the subsidy depends on the relative elasticities of demand and supply.

**P1: Producers gain more than consumers of electric vehicles** (I.e. Supply is more price inelastic than demand)

For the general public, the cost of owning an electric car is likely to take up a relatively large proportion of income. DD for electric vehicles is likely to be price elastic. On the other hand, the SS for electric cars is likely to be price inelastic in the SR due to factor immobility; 'new automotive manufacturing facility set for completion in 2020'. Thus for the general public, the demand for electric vehicles is likely to be more price elastic relative to the supply of electric vehicle.

The government subsidy reduces the cost of production and shifts supply to the right from  $SS_0$  to  $SS_1$ . Producer gain a higher benefit after subsidy of  $(P_2 - P_0)$ ,

Whereas the consumers gain less from the subsidy with a lower price per unit of  $(P_0 - P_1)$ .

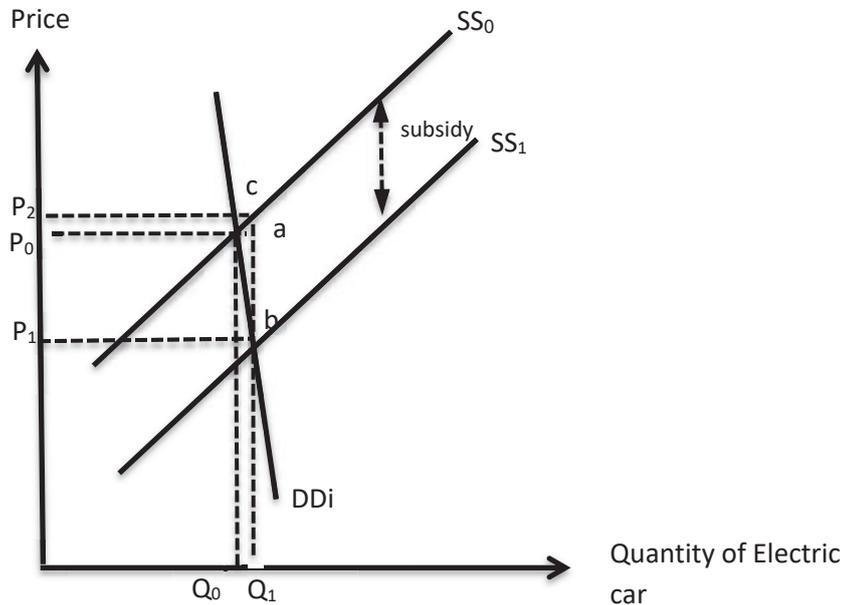


**P2: Consumers gain more than producers of electric vehicles** (I.e. Demand is more price inelastic than supply)

On the other hand, for the ultra-rich, the cost of owning an electric car is likely to take up a small proportion of the income. DD for electric vehicles are likely to be price inelastic. In contrast, SS for electric cars is likely to be price elastic in the LR when technology and

facilities are well developed. From extract 4, 'Electric vehicles are increasing in popularity as governments **worldwide drive forward plans** to gradually phase out polluting petrol and diesel cars'.

Producer gain a lower benefit after subsidy of  $(P_2 - P_0)$  in the figure below. Whereas the consumers gain more from the subsidy with a lower price per unit of  $(P_0 - P_1)$ .



**EV:** Depends on the level of technology and on the level of competitiveness amongst cars' producers → may produce a high level of inventories in the LR in anticipation of the popularity of electric vehicles → making PES elastic. Thus, in that scenario, consumers are likely to gain more.

Mark scheme:

Level	Descriptors	Marks
L2	Balanced answer with good application of economic analysis. Good reference made to the case material.	4-6
L1	Superficial analysis or only theoretical analysis without application to context.	1-3
Evaluation		
E2	Judgment is based on economic analysis and adequately substantiated.	2
E1	For an unexplained assessment, or one that is not supported by economic analysis.	1

(e) (i) **Explain the factors that the Malaysian government should consider in deciding whether to renew the licence of Australian rare earths producer Lynas Corp.** [6]

*Factors for Consideration: Benefits, Costs, Constraints, Information, Perspectives (from Decision-Making Framework)*

**Benefit/Constraints: Need for Govt to attract FDI**

- Ext 3 "We think we'll have to renew the licence," Mahathir told reporters at a news conference in Tokyo, adding Malaysia did not want to lose such a large

investment.” Malaysia may be constrained by its limited resources and thus need to award the investment to boost its economic growth

**Benefit: Gains from having rare earths mining/refining**

- Increase in FDI thus leading to an increase in AD. As mentioned in Ext 2 ‘Rare earths are used in consumer products, from iPhones to electric and hybrid car motors, and critical military applications, including jet engines, satellites and lasers.’ These are modern necessities and thus the demand for rare earths will continue to increase. With mining/refining, a country will be able to gain from the growth of the industry.
- Increase in Employment, Increase in X thus actual EG and higher material SOL.

**Cost: Costs of having rare earths mining/refining**

- As mentioned in Ext 3, apart from the environment damage, there are also health risks of ‘increased rates of leukaemia, birth defects, infant deaths, congenital diseases, miscarriages and lead poisoning’.
- Link to –ve ext of rare earths mining/refining
- Link to affecting the health of the citizens → resulting in lower ability to work → Fall in the quantity of workers who can work → fall in productive capacity → fall in LRAS.

**Information: Govt and citizens may have lack of info**

- Govt and citizens may not have full information on the effects on health and environment (Ext 3) to full understand the scale of cost

Level	Descriptors	Marks
L2	An answer with at least 2 factors considered and is well explained.  Accurate use of economic analysis and appropriate use of diagram.	4-6
L1	Smattering of some valid points or mere identification of factors without elaboration  Inaccurate or lack of use of economic analysis within answer  Only 1 factor well explained	1-3

(ii) **Explain why the government may intervene in the market for rare earths metal production to bring about a more efficient allocation of resources.** [6]

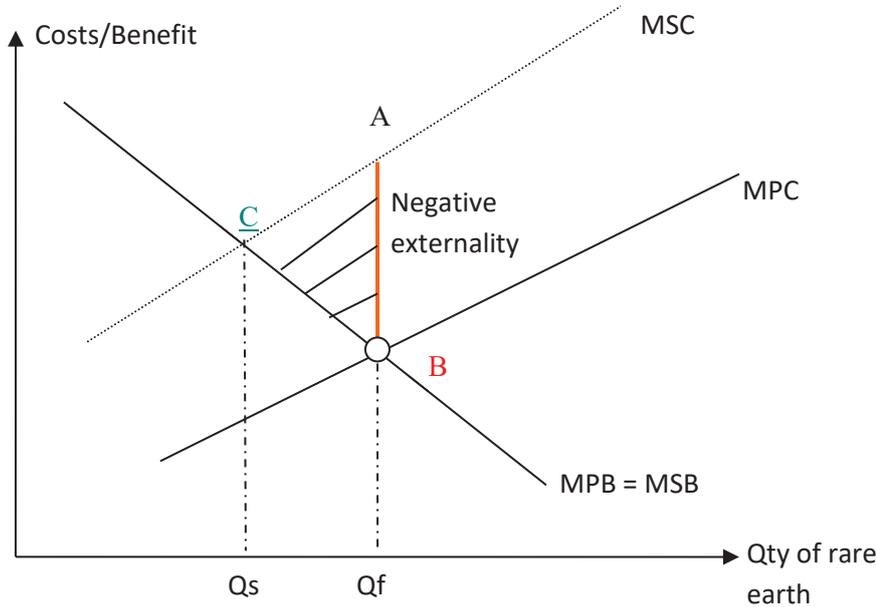
In deciding how much rare earths metal to produce, self-interested and rational producers will only weigh their **marginal private benefit (MPB) against their marginal private cost (MPC) and produce the quantity  $Q_f$ , where  $MPB = MPC$** . Private cost includes the cost of the factors of production, like wages paid to workers and the electricity cost in producing rare earths metal. Private benefit includes the revenue earned from the production of rare earths.

However, production of rare earths metal produces negative externalities (MEC). These externalities include **adverse impacts on health for third parties living in the area** suffering from ‘increased rates of leukaemia, birth defects, infant deaths, congenital diseases, miscarriages and lead poisoning’ as seen in Extract 3. The presence of the **negative externalities leads to a divergence between private and social costs, with  $MSC > MPC$  as  $MSC = MPC + MEC$** .

At  $Q_f$ ,  $MSC > MSB$ , society values an additional unit of rare earths production less than what it cost society to produce it.

**Socially optimal production level is at  $Q_s$   $MSB=MSC$ .**

There is an **overproduction of  $Q_s Q_f$**  leading to **deadweight loss of triangle ABC**.



Level	Descriptors	Marks
L2	A well-explained answer, which uses clear, logical economic analysis to explain how inefficient allocation of resources arises. Reference is made to an accurately drawn diagram; Extract evidence is used to support the analysis.	4-6
L1	A mostly descriptive answer that states the relevant points without using economic analysis. Answer may be incoherent and does not follow a logical order. Diagram is not used, or is incorrect. Extract evidence not used.	1-3

(iii) **Discuss the view that the ‘500,000-ringgit lump sum to the local community’ is the most appropriate way to improve efficiency in resource allocation in the market for rare earths.** [12]

*Main argument: Look at how ‘500,000-ringgit’ lump sum increases the MPC.*

Points to consider:

- How does the lump sum payment work to solve the negative externality?
- What other policies can solve the negative externality
- What does appropriate mean? Effective, Fastest, lowest cost?

**Thesis: The lump sum payment is appropriate in improving efficiency in resource allocation**

The lump sum payment is able to reduce production of rare earths.

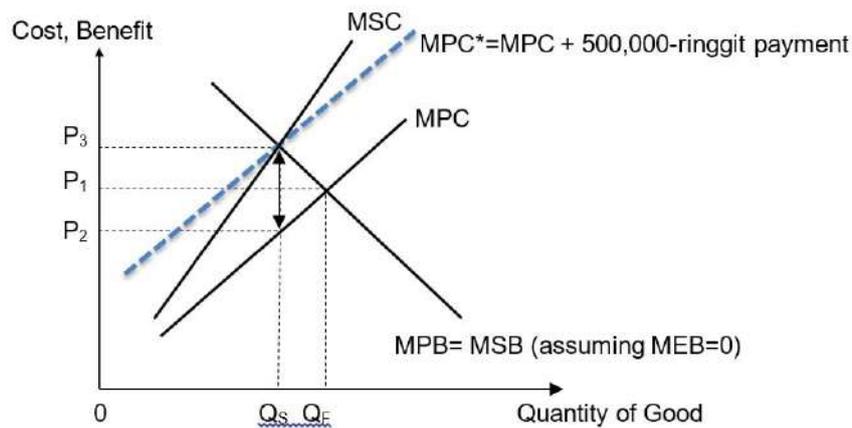


Figure : Effect of a 500,000-ringgit payment in correcting negative externality

The free market originally consumes/produces at  $Q_f$ . The **'500,000-ringgit' payment is effectively a tax, equal to the marginal external cost at  $Q_s$**  is paid by the firm. There is **internalisation of the externality**, i.e. the payment makes the private firm take into account the negative externality in their decision making and affecting their cost of production. This causes the firm's new **MPC to shift up to  $MPC^*$** . As a result, the firm **produces where  $MPC^*=MPB$ , i.e. at  $Q_s$** .

The allocative efficient output level  $Q_s$  is achieved and the deadweight loss is eliminated, with an increase in price. Market failure is resolved.

*\*Alternatively: '500,000-ringgit (\$158,000) lump sum to the local community' can be regarded as a lump sum tax.*

EV: However, '500 000 ringgit' may not be sufficient to cover the external cost of that is created in the production of rare earths. And it is very difficult for any government to know the exact value of MEC that is required of the producer.

### **Anti-Thesis : Other policies may be appropriate in improving efficiency in resource allocation**

#### Alternative Policies

- Regulation
- Ban
- Public Education

#### **Regulation** (students do not need to explain both types):

Regulations could be used to reduce (i) output; or (ii) external costs.

- (i) Regulations to reduce output are known as an **output quota**. An output **quota set at the socially optimum output level of  $Q_s$**  where  $MSB=MSC$
- (ii) Regulations to **reduce external costs will shift the MSC curve closer to the MPC curve**. The Malaysian government will require the firms to adopt a **particular technology** to reduce pollution, or require that waste materials to be **processed and deemed safe** for the environment before being allowed to be released. This would reduce the external cost, thus reducing the divergence between marginal private costs and marginal social costs.

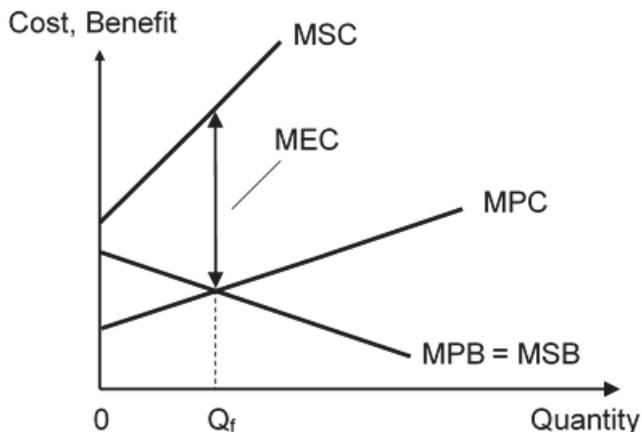
Both types of regulations force producers to cut back their production to socially optimal level and thus eliminates deadweight loss.

EV: The government may incur **monitoring costs** to ensure the firm meets the regulation. **Corruption** being present in the country may make enforcement a little more difficult. **Penalties** imposed must be hefty enough to deter violations.

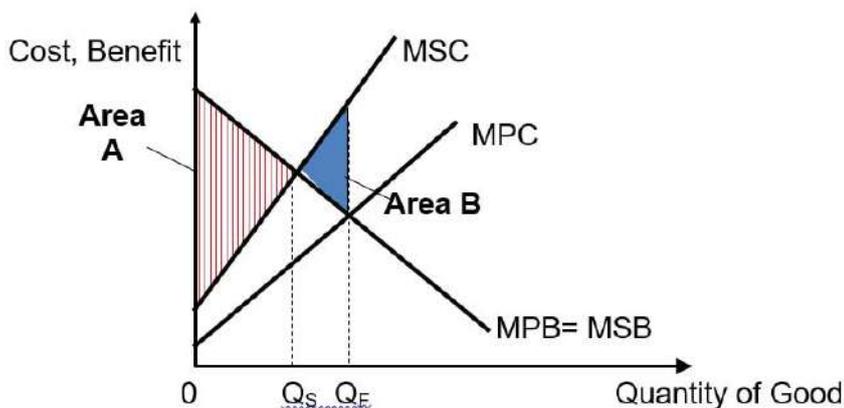
**Ban:**

A ban is an outright restriction of output where the quantity produced will now be 0. This eliminates all external costs, because zero units of the good is produced.

Ideally, the government should ban the product only if the MSC is greater than MSB for all output levels and seen in the figure below



EV: However, goods should not be banned when the negative externalities generated do not cause such a great divergence such that MSC exceeds MSB at all output levels. This means there is still a positive socially efficient output level that should be produced. If the government still insists on banning the good, the ban in this case will be an inefficient ban. Such an example is given below.



As can be seen from figure above, MSC does not exceed MSB at all levels of output, i.e.  $Q_s$  (where  $MSC=MSB$ ) is greater than zero. There is still a positive quantity of the good that is socially efficient if produced/consumed.

Hence, by completely banning the good, potential net benefit from producing the good is lost and this is illustrated by area A. Banning the good resulted in a deadweight loss of area A, which is larger than the deadweight loss of area B that would have been generated if the government had not intervened and had allowed the free market to prevail at  $Q_f$ . The ban has created an even larger welfare loss (A) than at free market equilibrium (B). Hence, the ban is inefficient.

It is thus dependent on the Malaysian Government to determine the Net benefit from the production of rare earths and if it exceeds the net cost to society for a ban to be deemed inefficient.

**Public education:**

Public education aims to get producers to produce up to the allocative efficient output level  $Q_s$ , by (i) voluntarily internalising the external costs; or (ii) voluntarily reducing the external costs. This may be done using advertisements and campaigns informing the producers of the external cost of production.

With reference to Figure , firm will voluntarily take into account the external costs and the MPC curve will shift closer to the MSC curve. As a result, production of goods with negative externalities ( rare earths) would be reduced and correspond with the optimal output  $Q_s$ .

EV: The effectiveness of public education is not certain since adoption by producers is voluntary. It depends on how receptive the firm is to the campaigns and education. There is also high cost associated with carrying out campaigns and it may also take a long time for the results to be seen. If the external costs are severe and must be dealt with immediately, other measures need to be used together with public education.

**Synthesis**

**Stand:** Overall, the lump sum payment may not be the most appropriate way as a regulation may be better.

**Substantiation:**

- Regulation is simpler to implement compared to a lump sum payment/tax. The technical difficulties involved in formulating what is an appropriate amount of 'pollution' may be more difficult to determine due to imperfect information.
- However for Malaysia, a total ban on the production of rare earths might be the most feasible solution for the country as it will not need to use resources to enforce regulations. However, that might be at the cost of billions of investment dollars which the country may need to boost its economy.

Level	Descriptors	Marks
L3	A well balanced analysis of at least 2 policies (including lump sum payment) that could solve the effects of production of rare earths.  2 policies, well explained with economic analysis can achieve high L3  Appropriate use of economic framework(s)  Good use of case evidence	6-9
L2	Provided a detailed explanation of the implication of compensation package in resolving the source of market failure and at least 1 other policy in mitigating the effects of production of rare earths  <b>Answer may contain some minor inaccuracies in economic analysis</b>	3-5
L1	<b>Considered superficially the impact of the compensation package on the market of rare earths and/or other policies to mitigate the effects of production of rare earths</b>  Answer contained inaccuracies and/or lack economic analysis.	1-2

**Evaluation**

		E2	Good evaluation, based on the measure being supportive of the price mechanism.	2-3		
		E1	Some unsupported evaluative statements.	1		

Question 2

(a)	(i)	<b>Using Table 1, compare the material living standards and overall living standards between Singapore and Hong Kong.</b>	<b>[2]</b>
		<p>I. Singapore has a higher <b>material</b> living standards as compared to Hong Kong, as our GNI per capita is higher. -1m</p> <p>II. Hong Kong has higher <b>overall</b> living standards than Singapore as their HDI value is higher. -1m</p> <p>Accept: Singapore and HK have similar overall living standards as the HDI values are similar.</p>	
	(ii)	<b>Explain possible reasons for the above observations.</b>	<b>[4]</b>
		<p>I. Singapore might have higher GNI due to <b>better export performance/better government policies to attract inward FDI</b>. This would increase Singapore's AD, increase RNY and hence GNI per capita, ceteris paribus. With higher GNI, Singapore would have higher material living standards.</p> <p>II. For overall living standards, Hong Kong may have better overall living standards due to <b>better quality of healthcare /higher educational attainment</b> on average, possibly due to the <b>government investing more resources in these areas</b>. This would contribute to a higher quality of life, accounting for the higher non-material living standards and hence the higher overall living standards in HK.</p> <p><i>Notes to students</i></p> <ul style="list-style-type: none"> <li>• For point on overall SOL, the reason given needs to be linked to the indicators included in HDI. E.g. discussion of "higher stress in SG" not accepted unless it is linked to health/life expectancy</li> <li>• If students said in part (ai) that overall SOL is similar, as long as their reason is able to account for the similar overall SOL, it can be accepted.</li> <li>• Answer should contain two reasons, one to account for each observation made in a(i)</li> </ul>	
(b)		<b>Using Extract 5, account for the change in unemployment rate in the U.S.</b>	<b>[3]</b>
		<ul style="list-style-type: none"> <li>• <b>Identify the change:</b> The unemployment rate <u>fell</u> to a 16-year low (Ext 5). [1]</li> <li>• <b>Evidence:</b> This was due to new jobs being created ("Non-farm payrolls increased 138,000 last month")</li> <li>• <b>Explanation:</b> With more jobs created, more people would have been able to find a job, leading to a fall in unemployment rate.</li> <li>• <b>OR</b></li> <li>• <b>Evidence:</b> This was because "429,000 people dropped out of the labour force"</li> <li>• <b>Explanation:</b> Since unemployment rate is calculated as a % of labour force, with a smaller labour force due to some unemployed dropping out, the unemployment rate would decrease.</li> </ul>	
(c)		<b>Explain the likely impact of "the reality of Trump providing fiscal stimulus almost gone and the Federal Reserve raising interest rate" on the U.S. economy in both the short-run and the long-run.</b>	<b>[6]</b>
		<p><u>Interpretation of events:</u></p> <ul style="list-style-type: none"> <li>• Reduction in fiscal stimulus → fall in G (<b>contractionary fiscal policy</b>)</li> </ul>	

- Fed “raising interest rate” is a **contractionary monetary policy**, increasing cost of borrowing and lowering C & I (C rises because of less purchases of consumer durables, and I rises because previously profitable investments become unprofitable with rise in COB).

Short-run impact

- Decrease in G, I, C → Decrease in AD → Decrease in RNY via multiplier effect
- Diagram to illustrate
- **Impact on macro aims:** Slower or negative economic growth; higher cyclical unemployment as firms cut back on production and hire less labour; decrease in GPL

Long-Run Impact

- Decrease in I → decrease in AS in long-run as capital stock is depleted and not replaced → Negative potential EG
- Fall in AS also worsens inflationary pressure
- Diagram (can be combined w earlier diagram for SR)

Level	Descriptors	Marks
L2	Well-reasoned, balanced answer that looks into both policies impacting various macroeconomic goals. <ul style="list-style-type: none"> <li>• Students can also reach L2 by explaining impacts on both actual and potential growth (even if no other macro aims are explained)</li> <li>• Max L2-4: Answer with no long-run impact</li> </ul>	4-6
L1	Answer that looks into only one government policy. Analysis is incomplete or contains errors.	1-3

(d) **“When unemployment is low, inflation is high, and vice-versa.”** **[6]**

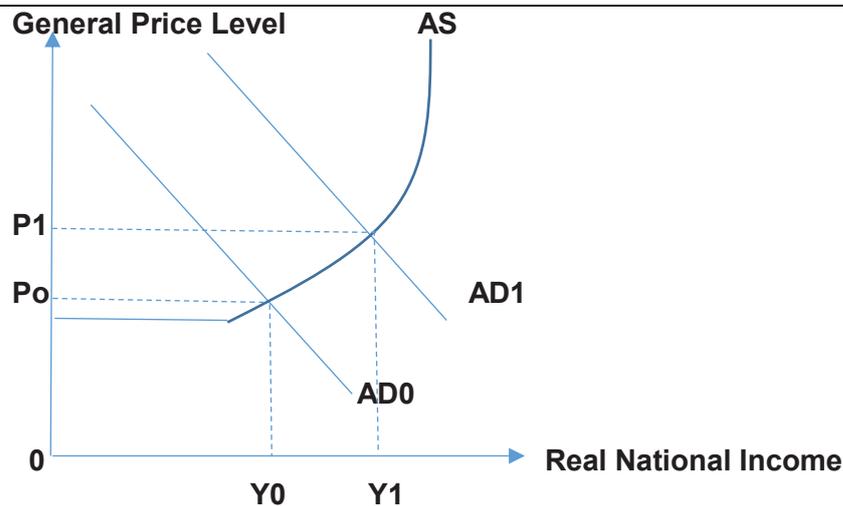
**Using an AD/AS diagram, explain the relationship between inflation and unemployment and comment on the validity of the above statement.**

Low unemployment would result from economic growth in the US which has resulted in an increase in the purchasing power of consumers and thus an increase in AD.

An increase in AD leads to an increase in real national income, a fall in cyclical unemployment and an increase in GPL.

**Case evidence - Extract 6:** in a stable world where economic growth is occurring but there are few people unemployed, people have higher buying power and this will raise the consumption level in the economy, triggering inflation.

Thus, there is an **inverse relationship** between low unemployment and high inflation and the statement is therefore valid.



Draw a diagram to show rightward shift of the AD curve at the intermediate range of AS as shown above.

However, inverse relationship may not be valid:

- If increase in GPL is due to a fall in AS. (Cause of inflation)
- A fall in AS will lead to a fall in real national income and increase in unemployment with an increase in GPL.
- If economy is at the Keynesian or Classical range of AS (State of the economy)
- If the economy is at the Keynesian range of the AS curve, increase in AD as a result of economic growth will result in an increase in output and low unemployment but no change in GPL.
- If the economy is at the Classical range, an increase in AD will have no impact on unemployment but will cause inflation.

Thus, taking into account various possible states of the economy, the statement may not be valid except when the economy is operating on the intermediate range of AS.

**Mark Scheme**

1 mark for correct identification of relationship as inverse

1 mark for accurately drawn diagram

2 marks for explanation of inverse relationship

Up to 2 further marks for one valid comment

(e)	<p><b>Extract 7 states that “Should Singapore be hit by higher unemployment, it will be because of a shortage of skills.”</b></p> <p><b>To what extent do you agree with the above statement?</b></p>	[8]
	<p><b>Identify</b> the unemployment in Extract 7: <u>Structural unemployment</u> which arises because of a mismatch of skills (the skills demanded by employers do not match the skills of those unemployed)</p> <p><b>Thesis:</b> Agree that structural unemployment is caused by shortage of skills</p> <p><b>Case evidence:</b> “Should Singapore be hit by higher unemployment, it will be because of a shortage of skills — as a result of the widening jobs-skills mismatch”</p> <p>This leads to <b>occupational immobility</b> which refers to the situation where people are unable to take up jobs in another industry or occupation because they lack relevant skills or education. Such mismatch of skills is caused by market failure in the training market. Employers are often reluctant to provide training for fear of workers moving to another firm. Workers may also be reluctant to take up training because they are unable to afford the</p>	

direct training costs and also the opportunity costs incurred due to the income forgone while they are being trained.

**Possible Thesis**

Shortage of skills can also arise because of economic restructuring.

Case evidence: “unemployment rate has climbed to 2.3 per cent because of economic restructuring”

With the growth of international competition, this has become an important cause of unemployment in Singapore which has seen industries shifting production bases to countries where the production costs are lower. Workers become unemployed as there are no jobs at all or they lack the skills required by other industries. The outsourcing of factories and jobs to developing countries in the region is another cause of structural unemployment in Singapore.

**Another Possible Thesis**

Technological unemployment is a type of structural unemployment resulting from the successful growth of new industries using labour-saving technology e.g. automation. Advances in automation have been blamed for rising structural unemployment.

Case evidence:

“Growing fear around the world that technology may eventually take over more jobs, making many more workers redundant.”

**Anti-thesis:** On the other hand, other reasons such as poor economic growth can also account for higher unemployment (cyclical unemployment) in Singapore.

Case evidence: Extract 8: “Singapore’s economic growth sagged in 2014 to its weakest in five years.”

As the economy slows down, aggregate demand falls due to a fall in consumption and investment. Firms find that they are unable to sell their current level of output at the current general price level. They will have to cut back on production and the amount of labour they employ (since labour is a derived demand). This results in cyclical unemployment, Cyclical unemployment can also be due to spill over effects if US economic growth falls. Singapore’s exports will be indirectly affected resulting in a fall in export revenue → fall in AD → higher cyclical unemployment.

Conclusion

**Stand:** Overall, I do not agree with the statement.

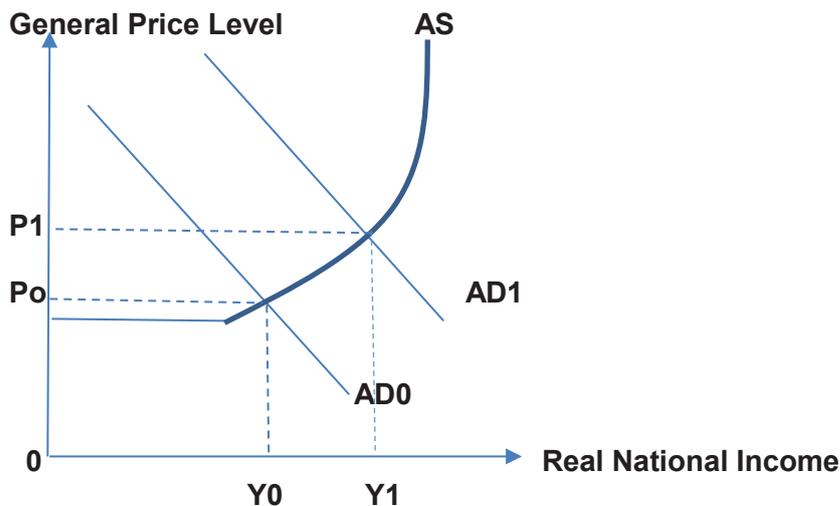
**Substantiation:** While structural unemployment may be caused by mismatch of skills, there are other causes of structural unemployment. Furthermore, if Singapore experiences slow economic growth or a recession, cyclical unemployment may also result. Furthermore, the Singapore government has already put in place measures to address structural unemployment, for example, the SkillsFuture movement and the Adapt & Grow initiative which help those without work adapt to changing job demands and acquire the necessary skills to find new jobs.

**Mark Scheme:**

Level	Descriptors	Marks
L2	Able to explain at least 2 causes of unemployment, well elaborated and supported by case evidence where possible.	4-6
L1	Able to explain how unemployment is caused by mismatch of skills with case evidence Superficial explanation of 2 causes.	1-3

		<b>Evaluation</b>		
	E2	Well justified Evaluative Comments	2	
	E1	Evaluative comment with no or poor justification	1	
<b>f</b>	<b>(i)</b>	<b>Explain why Singapore does not use interest rates as an instrument of monetary policy.</b>		<b>[4]</b>
		<p><b>2 reasons are required to secure 4 marks.</b></p> <p><b>Reason 1:</b> Use evidence from Extract 8 – exchange rate policy is a tool that helps fight against imported inflation.</p> <p><b>Knowledge:</b> As SG relies heavily on imports, changing interest rates would have a less direct effect on prices we pay compared to exchange rate which affects prices of imports directly. By appreciating SGD, the price of imported goods becomes relatively cheaper in domestic currency and firms can buy cheaper factors of production, reducing imported cost-push inflation.</p> <p><b>Reason 2:</b> SG faces the Open Economy Trilemma. As we maintain free capital flows, money supply changes whenever capital flows in and out of SG. Thus, SG does not use interest rates as an instrument of monetary policy as it is unable to control interest rate when money supply keeps fluctuating.</p> <p>Note: If small multiplier is given as reason, this is accepted but full credit only if student is able to explain why size of k is not a limitation of exchange rate policy (to address imported inflation)</p>		
	<b>(ii)</b>	<b>Singapore adopted a “neutral stance of zero appreciation in the currency”.</b>		<b>[12]</b>
		<p><b>Discuss whether such a policy is the best way for Singapore to achieve the twin objectives of full employment and price stability.</b></p> <p><b>Introduction</b></p> <p><b>Definition:</b> Exchange rate policy is a form of monetary policy where the government intervenes by manipulating the exchange rate of its currency to achieve its macroeconomic objectives. It is often done to promote price stability as a sound basis for sustainable economic growth.</p> <p><b>Overview:</b> Neutral stance of zero appreciation can be one way to achieve price stability &amp; address cyclical unemployment. This policy comes with limitations and as such, we need to look into the use of other policies like Supply Side Policies (SSP).</p> <p><b>Thesis</b></p> <p><b>Point:</b> Use of neutral stance of zero appreciation will help to achieve a lower rate of cyclical unemployment</p> <p><b>Elaboration:</b> When Singapore changed its stance from gradual &amp; modest appreciation to a neutral stance of zero appreciation, this is effectively a depreciation.</p> <p>With a depreciation of our currency, price of exports in terms of foreign currency will become cheaper and price of imports in terms of domestic currency will become more expensive. Assuming Marshall-Lerner Conditions (MLC) holds, net exports (X-M) will increase. The rise in (X-M) will lead to a rise in Aggregate Demand (AD), shifting AD to the</p>		

right. With the rise in AD from AD0 to AD1 as shown in figure 1 below, firms will need to step up production and thus need to hire more labour. This helps to lower cyclical unemployment.



**Figure 1: Singapore's Economy**

**Anti-thesis 1**

**Point:** However, the use of neutral stance of zero appreciation cannot help to lower structural unemployment

**Elaboration:** As shown above, the use of such policy helps to solve cyclical unemployment in the economy. Singapore also faces the problem of structural unemployment and this policy cannot solve this type of unemployment. Thus, there is a need for another policy to target structural unemployment in Singapore.

**Anti-thesis 2**

**Point:** Furthermore, the use of neutral stance of zero appreciation might worsen price stability.

**Elaboration:**

- Effective depreciation results in rise in import prices in terms of SGD → imported cost-push inflation as SG is highly dependent on imported factor inputs
- DD-pull inflation may also result (if economy is close to Yf) as AD increases and there is greater competition for scarce resources, increasing the price of factors of production. General Price Level (GPL) will then increase from P0 to P1 as shown in figure 1.

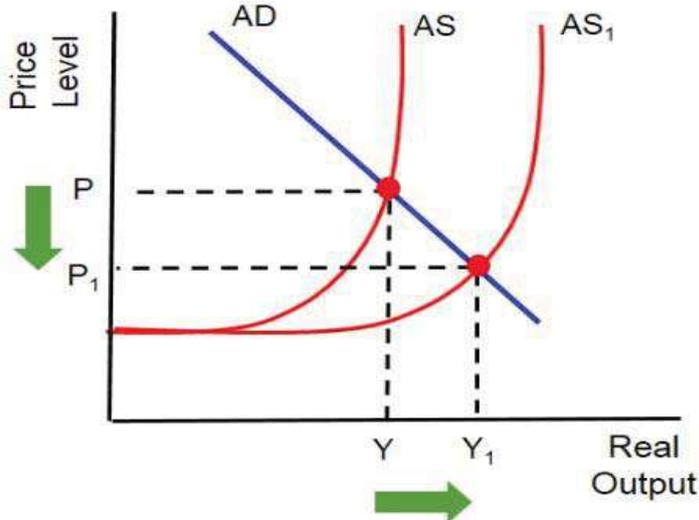
**Anti-thesis 3**

**Point:** Other policies, such as Supply Side Policies (SSP) may be better.

**Elaboration:**

- Interventionist supply side policies e.g. skills upgrading and retraining of workers can help to increase the quality of labour in Singapore by increasing labour productivity and this will lead to an increase in overall productive capacity of the country. This will cause the Long Run Aggregate Supply (LRAS) curve to shift to the right from LRAS0 to LRAS1 as shown in figure 2 below. With this shift of LRAS curve, there will be a fall in GPL from P0 to P1, helping to stabilise the price increase from the neutral stance of appreciation.
- This policy also helps to workers who currently have no jobs due to mismatch of skills. Thus, this policy can also help to solve structural unemployment in the Singapore economy too.

- Students can also explain other possible SSPs such as R&D, investment in infrastructure, etc.



**Figure 2: Economy of Singapore**

**Evaluative Conclusion**

**Stand:** In conclusion, the use of the neutral stance of zero appreciation alone is not the best way to solve achieve the two given goals in the question. [Stand]

**Substantiation:**

- Tinbergen Rule: There are currently two macroeconomic objectives, namely achieving price stability and achieving full employment. Tinbergen rule states that achieving the desired targets requires an equal number of instruments.
- Root cause: Lastly, using just the neutral stance of zero appreciation is not the best way as it cannot target the **root cause** of each problem. For instance, the use of such a policy can solve cyclical unemployment but not structural unemployment. This enforces the need for more than one policy to achieve the desired outcome.

**Mark Scheme**

Level	Descriptors	Marks
L3	An answer that provides a balanced view on using neutral stance of zero appreciation and explains an alternative policy to achieve <b>both</b> objectives.	6-9
L2	An answer that explain two policies to achieve either full employment <b>or</b> price stability and provides some limitations.  One policy that explains how either objective is achieved, including limitations. [Max 3m]	3-5
L1	An answer that merely identifies policies without linking to the two objectives.	1-2
<b>Evaluation</b>		
E2	Well-justified Evaluative Comments	2-3
E1	Unjustified Evaluative Comments	1





CANDIDATE NAME

CT GROUP

CENTRE NUMBER

INDEX NUMBER

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ECONOMICS  
Paper 1

8823 / 01  
2 September 2019  
3 hours

Additional Material: Answer Booklet

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**READ THESE INSTRUCTIONS FIRST**

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

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

Indicate on the cover page of the 12-page answer booklet your H1 Economics tutor's name on the top right hand corner.

Answer **ALL** questions.

Write all your answers in the 12-page answer booklet.

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

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

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

You may use a calculator.

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

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Answer **all** questions.

### **Question 1: Market for timber**

#### **Extract 1: Logging halt would boost economy**

Victoria's central highlands is the catchment for the majority of Melbourne's water storage reservoirs and it also contributes to the tourism economy in the most populous city of the Australian state of Victoria. It is estimated that the central highlands adds \$310 million worth of economic value to the state's water supply and \$260 million to tourism.

On the other hand, the central highlands is home to trees which have been logged for hardwood production. A study last year found native logging and processing helped generate more than \$500 million for the state's economy supporting more than 2,000 jobs. Opponents of native timber logging, much of which is used as pulp for paper and for furniture production, said the industry could be supplied with plantation timber instead of trees from the highlands.

Furthermore, some analysts reported that moving away from harvesting of native forest would contribute to improved economic, social and environmental benefits for the people of Victoria. By stopping logging, the water catchment would be improved and would maximise "water yield and quality" and increase the amount of water available to Melbourne. A young forest after logging soaks up most of the water, dries out the water catchments and reduces the amount of water that flows into the dams for the city of Melbourne. These dams are meant to power hydroelectric power stations that generate cheap, renewable electricity and hence provide sustainable and reliable source of energy.

Tourism is a major employer in the region and it would be boosted by ending logging. Local tourism operators say a national park would boost domestic and international tourism with some of the world's oldest trees and forests in the region.

Source: *ABC News*, 10 Sep 2017 and *Melbourne Water*, accessed 25 Jun 2019

#### **Extract 2: First UK company to be fined under illegal logging laws**

Designer furniture retailer Lombok has become the first UK company to be prosecuted and fined under illegal logging rules designed to stop the import of timber linked to widespread deforestation around the world. Environmental groups said the prosecution was likely to be the "tip of the iceberg" as many firms, particularly in the furniture sector, still don't have a grip on where their raw materials come from.

According to the Department for Business Energy and Industrial Strategy (BEIS), authorities twice warned Lombok in 2015 after it failed to exercise the required due diligence to ensure that items it had sourced from India were made out of wood from legal logging sites, but the company continued to sell those items. BEIS is a governmental department in UK that aims to promote competitive markets and responsible business practices, and actively take actions against climate change. In October 2016, BEIS enforcement officers visited Lombok's central London showroom and found the company had again not made checks on an imported sideboard it was selling. The company was then prosecuted and fined £5,000 plus costs.

World Wildlife Fund's (WWF) research has found that many businesses do not have policies on how they buy their timber, four years after the European Union Timber Regulations (EUTR) were introduced. This often goes hand in hand with failure to carry out due diligence on suppliers and their sources. The EUTR requires importers or sellers of timber and wood products to keep records of the sources of their supplies. The rules are intended to slow the global trade in illegal timber which Interpol estimates to be worth between \$30 billion and \$90 billion every year.

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“Deforestation, which illegal logging leads to, is not just about habitat loss – forests are of fundamental importance to life on Earth,” a representative for WWF said. “They are vital resources for local communities, but the impact of their loss can also be far reaching. Computer modelling has shown that deforestation in Asia could lead to changes in the route storms take over Europe, and Amazon deforestation could increase annual rainfall in northern Europe. The EUTR and efforts by BEIS will therefore ensure that consumers of timber products are well informed of the true cost of buying timber products that come from illegal sources.

**Table 1: Production data on selected products using forest woods in Europe**

	2013	2014	2015	2016	2017
Production of Industrial Roundwood (1000 meter cubic) <sup>1</sup>	366,929	383,446	388,422	396,055	400,973
Production of Paper-based Products (million tonnes) <sup>2</sup>	98,656	98,085	97,769	97,663	97,870

Note: Both industrial roundwood and paper-based products are alternative products of logging.

1. Industrial roundwood is a term used to refer to a range of wooden products such as pulpwood and wood residues, that are commonly used in the construction industry or the production of furniture.

2. Paper-based products refer to a range of products such as writing papers and paperboard (cardboard).

Source: Various

### **Extract 3: Chinese demand for rosewood timber drives towards its extinction**

The purchasing power of China’s burgeoning middle class is the stuff of dreams for retailers, but is increasingly causing nightmares for conservationists. The robust pace of China’s economic growth between 1978 and 2012 created a massive middle class of 480 million people in 2018, a figure projected to increase to 780 million by the mid-2020s.

For these consumers, previously unaffordable products like rosewood timber furniture have become status symbols. Known in Chinese as *hongmu*, rosewood timber is a fragrant, richly hued timber native to the tropics, from Southeast Asia to Africa. Rosewood furniture derives value from both its “beautiful lustrous qualities” and its rarity, since rosewood timber is “difficult to harvest and mostly found outside China”. The rosewood tree is slow-growing, with a lifespan of several hundred years, and the rapid rise in demand has driven numerous species of rosewood timber towards commercial extinction.

Furniture-makers have turned to Siamese rosewood timber in Southeast Asia, but as these timber supplies fell as well, they have ventured ever farther afield for related species – to Africa. Currently, between 40 and 50 percent of rosewood timber in the Chinese market originates in African countries, such as Kenya.

Source: *South China Morning Post*, 17 Sep 2018

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#### **Extract 4: Kenya's industry hit hard after logging ban and a rise in minimum wage**

Kenya's Deputy President suspended logging in all forests in the country for the next three months as water levels in major rivers continue to drop at alarming levels. This move is part of the efforts by the country's government to respond to the drought that is sweeping across the country. The logging ban has triggered a 36 percent and 11 percent rise in timber and furniture prices, respectively. According to the official estimates, acute shortage of logs hit saw millers' ability to meet demand from builders and carpenters, pushing up prices.

The latest logging ban is a hit to the construction industry in Kenya, which is still reeling from the announced increase in the minimum wage for Kenyan workers recently. Kenya's President said the increment had been made in view of the current inflation rate. "In recognition of the good work done by our workers and taking into account the rate of inflation of 4.8% this year, I hereby declare a corresponding increase of 5% on the minimum wage," the government statement read.

In response, the Kenyan businessmen sounded a warning against an increase of the minimum wage, saying such a measure would be a big blow to the industry. "A ceremonial wage increase will not help us to tackle the subject of poverty eradication and will be costly for industry players," said the chief of a business association.

Source: *Various*

#### **Extract 5: Forest tax in Washington**

Washington State encourages sound forestry practices so that present and future generations can enjoy the many benefits they provide. In addition to scenic and recreational spaces, healthy forests provide an enhanced water supply, reduced soil erosion, storm and flood damage. Forest tax – sometimes called timber tax – is an excise tax that began in 1971, when the Legislature excluded timber from property taxation. In place of a property tax on trees, timber owners pay a 5 percent excise tax on the value of their timber when it is harvested.

In 1982, the Forest Tax was extended to timber harvested from state and federal land, in addition to private land. The person who owns the timber at the time of harvest is responsible for paying forest tax. The timber is taxed at 5 percent, with 4 percent going to the county where the harvest occurred and 1 percent going to the state general fund. Under this scheme, timber owners will have to apply for an official permit before they can start harvesting timber. The owners will then register and pay the necessary forest tax.

Source: *Department of Revenue, Washington State*, accessed 25 Jun 2019

## Questions

- (a) From Extract 1, identify **two** unintended consequences of logging. [2]
- (b) (i) Explain whether the service provided by an organization such as the Department for Business Energy and Industrial Strategy (BEIS) is likely to be a public good. [5]
- (ii) With reference to Table 1, compare the trends in the production of industrial roundwood and paper-based products in Europe and hence explain the economic relationship between industrial roundwood and paper-based products. [4]
- (c) (i) Given the information contained in Extract 3, explain the likely value of price elasticity of supply for rosewood timber. [2]
- (ii) Using Extracts 3 and 4 and with the help of a diagram, explain **one** demand and **one** supply factor that jointly lead to a rise in the equilibrium price in the world market for rosewood timber, and comment on the likely impact on the change in equilibrium quantity. [8]
- (d) Discuss the likely impact of a rise in minimum wage on the workers and producers in Kenya. [8]
- (e) (i) Explain how the presence of externalities could lead to an over-allocation of resources in the market for timber. [4]
- (ii) Discuss the factors that a rational government should consider when deciding whether to implement taxation or a total ban to achieve a more efficient allocation of resources in the market for timber. [12]

[Total: 45]

## Question 2: Economic growth and digital transformation

**Table 2: Selected economic indicators for China and Singapore (2015-2017)**

	2015	2016	2017
<b>China</b>			
Real GDP annual growth rate (%)	6.9	6.7	6.7
Rate of unemployment (%)	4.1	4.0	3.9
Annual rate of inflation (%)	1.4	2.0	1.6
Consumption (% of GDP)	52.8	54.0	53.2
X+M (% of GDP)	36	37	38.1
Gini Coefficient	0.462	0.465	0.467
Human Development Index (Ranking)	-	86	86
<b>Singapore</b>			
Real GDP annual growth rate (%)	2.9	3.0	3.7
Rate of unemployment (%)	1.8	1.9	2.2
Annual rate of inflation (%)	-0.5	-0.5	0.6
Consumption (% of GDP)	47.3	46.8	46.0
X+M (% of GDP)	329.4	304.5	318.8
Gini Coefficient	0.463	0.458	0.459
Human Development Index (Ranking)	-	8	9

Source: *Various*

### Extract 6: China's economic slowdown and rebalancing

China has so far managed a gradual economic slowdown. Looking at the demand-side of growth, investment has long been a major driver in China. A gradual rebalancing from investment-driven to consumption-driven growth is needed to avoid any further over-allocation of capital and its negative consequences, such as excess capacity in the economy.

While this rebalancing started a couple of years ago, the most recent Government Work Report reiterates the importance of boosting consumption. Consumption tends to be a more stable driver of growth than investment, being less prone to boom-and-bust of business cycles. In recent years, consumption has become the major driver of growth in China, overtaking investment. Nevertheless, the overall contribution of consumption to growth has been relatively stable in the past few decades. Thus, although rebalancing is under way, its pace is relatively slow. This may relate to still very strong motives to save money related to social security coverage that is only partial and the varying quality of public healthcare and education services provided across China. These factors force people to save for their old age, in case of illness or for their children's education, and so there is lower consumption.

The key question therefore is how to realise the consumption potential in China. Important prerequisites are high employment rates and rapidly growing incomes. While the unemployment rate has long been low in China, there is less information about underemployment, particularly in rural areas, where, by definition, all people are employed. Income growth has been strong in past years, though in 2016 it was relatively weaker, especially in urban areas. The good news, however, is that rural incomes have been continuously growing faster than urban ones, thereby reducing the urban-rural income divide.

Source: *The Telegraph*, 15 March 2017

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### Extract 7: Digital China

China has around 700 million internet users and 282 million digital natives (internet users less than 25 years old) eager to adopt new technology. The massive scale of the Chinese market and a supportive regulatory and supervisory environment in the early years of digitalization made China a global leader in frontier industries such as e-commerce and financial technology.

Digitalisation will continue to transform the Chinese economy by improving efficiency and softening the slowing growth as the economy matures. Over the past decade, China has become a leading global force in several areas of the digital economy. For instance, in e-commerce, only about a decade ago China accounted for less than 1 percent of the value of worldwide transactions; that share is now more than 40 percent. Some early investors in leading Chinese e-commerce players are estimated to have earned returns of thousands of times their initial investment. In mobile payments, penetration among China's internet users has grown rapidly, from just 25 percent in 2013 to 68 percent in 2016. In 2016, the value of China's mobile payments related to consumption by individuals was \$790 billion, 11 times that of the United States.

The Chinese government spent 430 billion yuan in 2015 to beef up the nationwide internet infrastructure. Another 700 billion yuan will be spent on this effort in 2016 and 2017, and an additional 140 billion yuan will be invested in improving rural internet connectivity until 2020. Putting all these internet-related policies in place could help provide economic growth momentum for China in the years ahead. The internet and its related technologies will change the nature of economic growth, especially as labour costs increase and the country's population ages. They will create new markets for innovative products and services.

Just a decade ago, there were fewer than 100 million internet users in mainland China, and the penetration rate was just 7 percent. Now, the penetration rate has reached nearly 50 percent.

Sources: *McKinsey Report 2017* and *South China Morning Post*, 3 February 2018

### Extract 8: Singapore - Slower growth expected in 2018

Growth this year is expected to be slower, The Ministry of Trade and Industry's (MTI) said. The Singapore economy, which grew 2.4 percent in 2016, picked up pace in 2017 on the back of surging global demand for electronic gadgets.

Government forecasters are estimating growth of 1.5 to 3.5 percent in 2018. Externally-oriented services sectors such as finance and insurance, transportation & storage and wholesale trade are expected to benefit from firm external demand, although their pace of growth is also likely to ease in 2018. The MTI said Singapore's external demand outlook is likely to be weaker this year compared with last year. Some risks remain - including concerns over protectionist sentiment and trade policies especially in the United States.

Source: *The Business Times*, 14 February 2018

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### **Extract 9: Digital transformation in Singapore**

Given the possible external challenges, the Singapore economy may have to turn towards domestic drivers for growth. This will be led by the ongoing expansion in services arising from the digital transformation of the economy. Digital transformation in the economy will add an estimated US\$10 billion to Singapore's GDP and increase GDP growth at an annual rate of 0.6 percent by 2021. These findings come from a study by tech giant Microsoft and market researcher International Data Corporation Asia.

As digital technologies continue to play a bigger role in the economy, digital products and services created directly through the use of digital technologies - such as cloud-related products and artificial intelligence (AI) - are poised to make up 60 percent of the country's GDP by 2021, up from 10 percent in 2017. Digital transformation holds additional economic benefits such as increased educational and training opportunities, the creation of higher-value jobs, and opportunities to take up digital-related freelance work.

Microsoft Singapore's managing director said: "Singapore is clearly on the digital transformation fast track. At the same time, businesses in Asia-Pacific are increasingly deploying emerging technologies such as AI as part of their digital transformation initiatives, and that will accelerate growth even further."

To date, Singapore's internet penetration rate has reached 82 percent, which is much higher than the global average rate of 50 percent.

Source: *The Business Times*, 21 February 2018

### **Extract 10: Digital transformation challenges Asia's inclusive growth**

Inclusive growth entails maintaining growth that creates employment opportunities and helps in reducing poverty. It means the poor can have access to essential services in health and education. It includes providing equal opportunity, empowering people through education and skill development. Some say that digital transformation can play a powerful role in fostering inclusive growth.

However, in the course of digital transformation, income disparity could grow, especially in developing Asian countries where the income gap and inequality in opportunities to access education have been persistent. Digital transformation, characterised by developments of a range of new technologies, is likely to result in job displacement in the labour-intensive industries. Consequently, white-collar workers with sought-after intellectual qualities would be offered higher salaries and benefits, compared to less educated and low-skilled labourers, intensifying the income gap. And, income disparity occurs not only between countries but also within countries because of the unequal provision of education services, especially between rural and urban regions.

Therefore, as long as changes in education do not catch up with technological advancements, the skill-biased technological transformation would affect people with insufficient or unsuitable education, perpetuating the vicious cycle of poverty and inequality. Thus, in order for the workforce to be fully and equally prepared for the technological revolution, increased education spending is an essential condition.

In Singapore, one key area of focus for policymakers will be how to make sure no one is left behind. Several key measures have been put in place in recent years, chief among them being SkillsFuture. Its initiatives, aim to provide a range of opportunities for workers to continue their education and training so that they can improve their skills and incomes throughout their careers. Other measures target improving the position of lower-paid workers and those who have retired from the workforce.

Sources: *The Straits Times*, 27 Sep 2015 and 13 May 2017

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## Questions

- (a) With reference to Table 2:
- (i) Compare the changes in Real GDP for China and Singapore over the period indicated. [3]
  - (ii) State and comment on the likely relationship between Singapore's Real GDP growth rate and inflation rate between 2016 and 2017. [3]
- (b) Using AD/AS analysis, explain **two** intended consequences of rebalancing in the Chinese economy and use an AD/AS diagram to explain why rebalancing might not remove the 'excess capacity' in the Chinese economy. (Extract 6) [7]
- (c) Using Extracts 9 and 10, explain and comment on the impact of digital transformation on the various types of unemployment. [8]
- (d) Discuss whether Asian economies can achieve inclusive growth through digital transformation. [10]
- (e) (i) From Table 2, identify and explain **one** indicator that is most useful in assessing standard of living. [2]
- (ii) Discuss the view that governmental efforts to promote digital transformation is the best approach to achieve faster growth in standard of living for a country. [12]

[Total: 45]

## End of Paper

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HCI H1 Economics Prelims CSQ1 (Micro) 2019

(a)	<b>With reference to Extract 1, identify two unintended consequences of logging.</b>		<b>[2]</b>
<p>Loss of \$310 million worth of economic value to the state's water supply [1] and                  Loss of \$260 million of tourism revenue. (Extract 1) [1]</p>			
(b)	(i)	<b>Explain whether the service provided an organization such as the Department for Business Energy and Industrial Strategy (BEIS) is likely to be a public good.</b>	<b>[5]</b>
<p>Yes [1], service provided by BEIS is non-excludable and non-rivalrous in consumption.</p> <p>It is non-excludable in consumption since society at large will benefit from the enforcement service including better environment/climate/more competitive market. And, it is impossible for the producers to prevent non-payers from enjoying these benefits once the enforcement service has been provided by BEIS. [2]</p> <p>It is non-rivalrous in consumption since an additional citizen benefitting from a better environment/climate/more competitive market due to the enforcement service provided by BEIS, does not diminish the amount of these benefits available to other citizens. [2]</p>			
	(ii)	<b>With reference to Table 1, compare the trends in the production of industrial roundwood and paper-based products in Europe and hence explain the economic relationship between industrial roundwood and paper-based products.</b>	<b>[4]</b>
<p>The production of industrial roundwood generally increased while the production of paper-based products generally decreased in Europe. [1]</p> <p>This is because industrial roundwood and paper-based products are <b>competitive in supply</b> [1] since they are both derived from the same resources, trees [1]. Hence, an increase in the production of industrial roundwood will lead to a fall in supply [1], hence production of paper-based products.</p>			
(c)	(i)	<b>With reference to Extract 3, explain the likely value of price elasticity of supply for rosewood timber.</b>	<b>[2]</b>
<p>It is likely that <math>PES &lt; 1</math> for rosewood timber due to long production time. [1]                  Extract 3 mentions that rosewood trees are "slow-growing". [1]</p>			

(ii)	<b>Using Extracts 3 and 4 and with the help of a diagram, explain one demand and one supply factor that jointly lead to a rise in the equilibrium price in the world market for rosewood timber and comment on the likely impact on the change in equilibrium quantity.</b>	<b>[8]</b>
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**Demand factor (2 marks)**

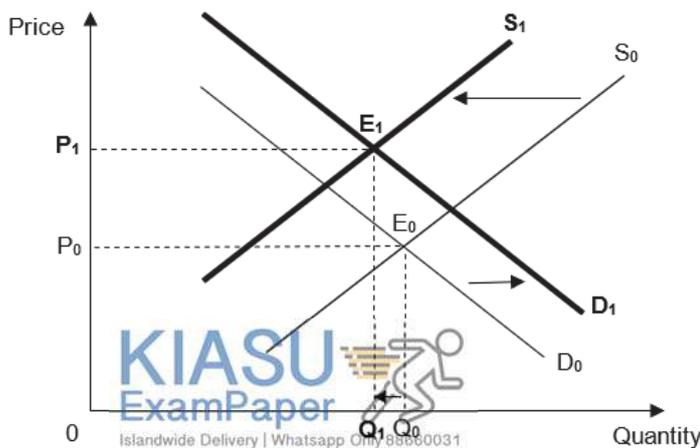
Extract 3 mentioned that the “robust pace of China's economic growth between 1978 and 2012 created a massive middle class of 480 million people in 2018, a figure projected to increase to 780 million by the mid-2020s.” This has led to a **higher income** and hence purchasing power of the middle-class consumers in China. “For these consumers, previously unaffordable products like rosewood furniture have become status symbols”, hence the rosewood furniture is likely to be a normal good. As the demand for rosewood furniture increases, the **derived demand for timber** in Kenya increases too since timber that originates from “African countries such as Kenya” (Extract 3) are raw material / factor input for rosewood furniture. The demand increases from  $D_0$  to  $D_1$  in Figure 1.

*Alternative demand factor. Positive taste and preference* towards consumption of rosewood furniture as rosewood furniture have become “status symbols”

**Supply factor (2 marks)**

The suspension of logging in all forests in Kenya for the next three months (extract 4) will reduce the supply of timber drastically as no trees can be felled to produce timber for the next 3 months. This will cause the supply to decrease from  $S_0$  to  $S_1$  in Figure 1.

*Alternative supply factor: Increase in minimum wage in Kenya increases the cost of production of rosewood timber (if we consider a rise in wage of rosewood timber loggers)*



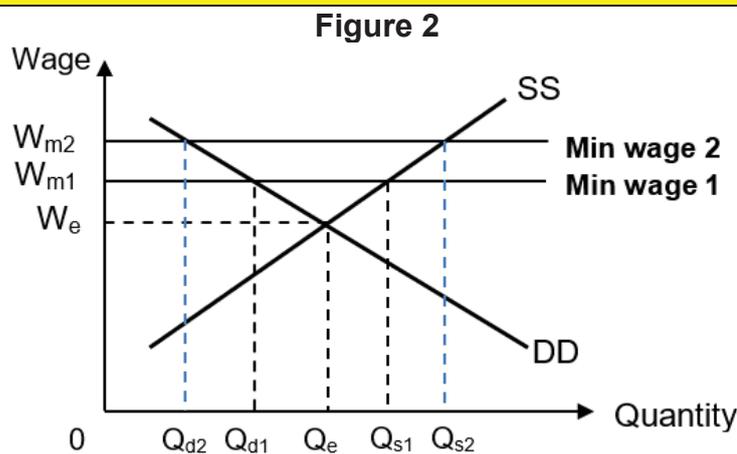
**Synthesis + Diagram (2 marks)**

The final equilibrium output is theoretically indeterminate and depends on the relative shift of demand and supply shift. If the supply curve shifts more than the demand curve, final equilibrium quantity is likely to fall from  $Q_0$  to  $Q_1$ .

**Comment on (2 marks)**

Extract 3 mentions that currently, “between 40 and 50 per cent of rosewood timber in the Chinese market originates in African countries such as Kenya”. There are also other sources of rosewood timber in Southeast Asia, Latin America and other African countries other than Kenya. Hence the demand for timber from Kenya is unlikely to increase a lot since rosewood furniture producers can procure the timber from other sources. Conversely, the fall in supply of timber is likely to be drastic due to the 3 months ban of logging. Hence, the supply is like to fall more than the increase in demand for timber in Kenya, leading to a fall in equilibrium quantity of timber in Kenya.

**(d) Discuss the likely impact of a rise in minimum wage on the workers and producers in Kenya. [8]**



A minimum wage is a legally established minimum wage above the market equilibrium wage. The minimum wage law is a regulation that makes hiring labour below a specific wage illegal. With reference to Figure 2, the initial minimum wage is at  $W_{m1}$ , where  $Q_{d1}$  units of labour are hired at a wage rate of  $W_{m1}$ . There is a surplus of  $(Q_{s1}-Q_{d1})$  units of labour at the initial minimum wage level of  $W_{m1}$ .

**Impact on Workers**

When the minimum wage in Kenya is raised to  $W_{m2}$  for instance, less workers,  $Q_{d2}$  units of labour are hired but they will earn a higher wage rate of  $W_{m2}$ . Extract 4 mentions that the 5% increase in minimum wage will allow workers to keep up with the 4.8% inflation rate in Kenya. Since the ***growth in nominal wage is higher than the inflation rate***, the ***real wage of the Kenyan workers will increase***, which will ***increase their material SOL***.

However, there will be a ***retrenchment of  $(Q_{d1}-Q_{d2})$  units of labour*** since  $Q_{d1}$  were hired initially before the rise in minimum wage. There is also an increase in the surplus of labor from  $(Q_{s1}-Q_{d1})$  to  $(Q_{s2}-Q_{d2})$ , ***hence higher unemployment rate***. The new surplus of  $(Q_{s2}-Q_{d2})$  units of labour is made up

of ( $Q_{d1}-Q_{d2}$ ) who are retrenched and ( $Q_{s2}-Q_{s1}$ ) who join the market seeking for a job due to the rise in minimum wage but are unable to find a job. These workers who are retrenched or remain unemployed will experience a fall in material and non-material SOL>

The **retrenchment of workers due to a rise in minimum wage will be significant as demand for workers who earn low wages is likely to be price elastic**. This is because low wage earners are typically unskilled or low skilled workers who can be more easily substituted by machines. Hence, the rise in minimum wage will lead to a **more than proportionate fall in quantity demanded of labour** in Kenya.

**Impact on Producers**

Producers in the construction and manufacturing industry will face a **rising cost of production** since labour is a major factor input. As Extract 4 mentions, a rise in minimum wage will not help to “tackle the subject of poverty eradication in a sustainable way” as it will be costly for the producers. The producers will **suffer a fall in profit** levels since Profit = Revenue – Cost.

**Evaluation**

A rise in minimum wage is likely to bring more harm than benefit, especially in the long run. While a rise in minimum wage increases income, purchasing power and hence material SOL, this **only benefits those Kenyan workers who remain employed in the relevant industries**. Producers will suffer as a result of the rise in minimum wage due to a rise in cost of production. A rise in minimum wage is not sustainable and if firms were forced to shut down due to them not been able to keep up with rising cost, more Kenyan workers will be retrenched and find themselves unemployed. Hence, a rise in minimum wage is likely to bring negative impacts on workers and producers in the long run.

<b>L2</b>	<p><b>Consolidate (Application and Analysis)</b> Sound analysis and coherent economic arguments.</p> <p>Discuss the positive and negative impacts of rise in minimum wage on both producers and workers in a clear and accurate manner with application</p> <p>Clarify – give examples from data with more elaboration</p> <p>Consider both sides (Thesis and anti-thesis / workers and producers)</p>	<b>4 – 6</b>
<b>L1</b>	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <p>Insufficient scope of discussion, only touches on either only thesis (positive impacts) or anti-thesis (negative impacts), or touches on either only impact on workers or impact on producers</p> <p>Lack of accuracy in the use of economic concepts, terms or phrasing of explanation.</p>	<b>1 – 3</b>

		Mainly lifting from extracts without additional DD-SS analysis or diagram.		
	<b>E2</b>	<b>Evaluative Comment</b> For an evaluation that contains:  A synthesis using economic arguments to arrive at <b>relevant</b> judgements/decisions of the impact on the workers and producers due to a rise in minimum wage in Kenya.  Evaluative comments supported by <b>accurate, logical</b> and <b>clear</b> analysis	<b>2</b>	
	<b>E1</b>	<b>Relevant</b> judgement(s)/decision(s) (did answer the question) but may not follow from relevant economic arguments. Comment (s) may lack <b>depth, clarity, and logic</b> .	<b>1</b>	
<b>(e)</b>	<b>(i)</b>	<b>Explain how the presence of externalities can lead to over-allocation of resource in the market for timber.</b>		<b>[4]</b>
		<p>Negative <b>production</b> externalities <b>[1]</b> occur when the production of a good negatively affects the well-being of third parties. According to extract 4, excessive logging to produce timber can lead to external cost such as drought <b>[1]</b>, which will adversely affect the livelihood of third parties such as residents who are not involved in the production and consumption of timber. This results in a divergence between SMC and PMC. <b>[1]</b> The market equilibrium quantity is at <math>Q_m</math> where <math>PMB=PMC</math>. The social optimal quantity is at <math>Q_s</math> where <math>SMB=SMC</math>. There is an <b>over-production</b> of timber <b>[1]</b> (<math>Q_m - Q_s</math>) and hence over-allocation of resources in the market for timber.</p> <p>Other possible EMC:</p> <ol style="list-style-type: none"> <li>Drought (extract 4)</li> <li>Soil Erosion (Extract 5)</li> <li>Flood damage (Extract 5)</li> <li>Less tourism revenue (Extract 1)</li> <li>Less water supply (extract 1 and 5)</li> <li>Climate change (extract 2)</li> </ol>		

(e)	(ii)	<b>Discuss the factors that a rational government should consider when deciding whether to implement taxation or a total ban to achieve a more efficient allocation of resources in the market for timber.</b>	<b>[12]</b>
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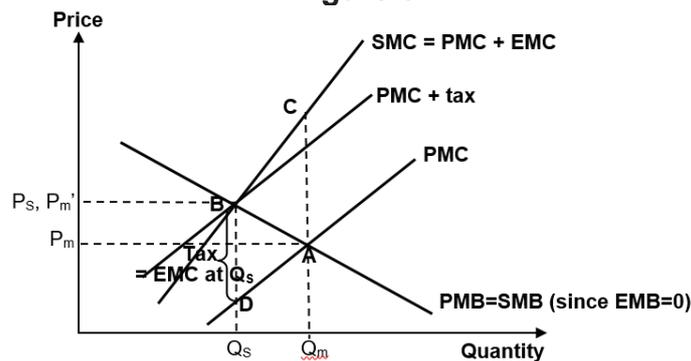
**Introduction**

A rational government should consider the cost, benefit and unintended consequence of the two policies in deciding which one to implement to achieve the best outcome.

**Government should consider the benefit of implementing taxation**

Imposition of an indirect tax on producers that corresponds to the external marginal cost i.e. **Tax = EMC at  $Q_s$**  (distance BD) on each unit of timber shifts the PMC upwards so that the new PMC, which equals  $PMC + tax$ , coincides with the PMB at  $Q_s$ . Hence, the new market equilibrium quantity where  $PMB = PMC + tax$ , now coincides with the **socially efficient** quantity  $Q_s$ , where  $SMB = SMC$ . If the tax accurately reflects the external marginal cost, timber producers and consumers are now in effect paying for the use of the environment. The externality has then been **internalised or priced in**. Deadweight loss is then eliminated as  $Q_m$  is reduced to socially optimal level,  $Q_s$ .

**Figure 3**



**Government should consider the limitations of taxation**

**Lack of information**

- Even if a government decides to impose a tax equal to EMC, there will still be a problem of measuring those costs and apportioning blame as it is difficult to quantify the EMC due to soil erosion and droughts and give a monetary value to them
- To correct the negative externality, the tax must accurately reflect the external costs. In reality, this is easier said than done. If the government over-estimate or under-estimate the external costs, then the **problem of resource misallocation** in the market for timber is still not fully resolved.

**Administration and compliance cost**

- According to Extract 5, timber owners in Washington will have to apply for a permit from the Department of Natural Resources before they can start harvesting timber. They will have to fill up tax reporting forms in order to register and pay the necessary forest tax. This

process might be costly and require a lot of manpower to oversee, incurring high administration and compliance cost.

### Impractical to use different tax rates

- To correctly internalise the externality, the tax should accurately reflect the external costs. However, timber owners produce varying amounts of externalities based on method of harvest timber. But it is administratively impractical to impose different tax rates for timber owners. Logging activities can take many forms, from selective harvesting to limited, small-scale clear-cutting, which, in temperate forests, can mimic natural disturbances such as fires or landslides. Timber owners who engage in such sustainable way of harvesting timber might incur lower EMC than others. However, it would be extremely difficult to measure and ascertain how much EMC each timber owner incurs.

### Government should consider the benefits of a total ban in resolving negative externality.

A total ban represents an extreme form of regulation in which the authorities prohibit the production of timber.

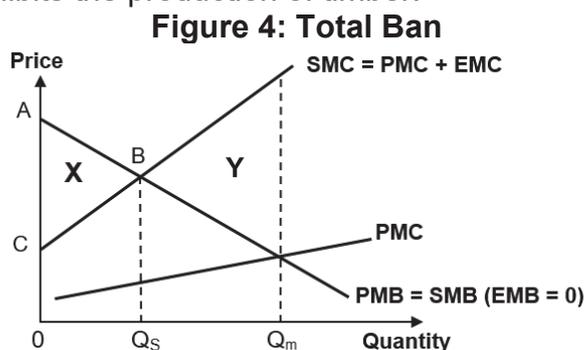


Figure 4 compares the welfare loss caused by the negative externality from producing timber with the welfare loss brought about by a total ban of timber.

The market equilibrium quantity is at  $Q_m$  where  $PMB = PMC$ , compared to the socially efficient quantity  $Q_s$  where  $SMB = SMC$ . Hence there is an overproduction of electricity from coal by quantity  $Q_m - Q_s$ , which results in a deadweight welfare loss of area Y.

When there is a total ban, zero quantity of electricity is generated.

In such a situation, there would be a loss of Area X ( $0ABQ_s - 0CBQ_s$ ) measured in terms of potential net welfare benefit forgone if the socially efficient quantity of good was produced.

On the other hand, a stoppage of production would result in a welfare gain of Area Y caused by overproduction. Hence, final outcome on welfare would depend on the relative size of Area X and Area Y.

According to figure 4, a total ban is beneficial since  $Area Y > Area X$  and hence there would be a net welfare gain from imposing the ban.

**Government should consider the other benefits of a total ban to the economy**

**Logging ban will lead to actual growth of Melbourne's economy.**

Victoria's central highlands is essential to contributing to the tourism economy in the most populous city of the Australian state of Victoria. It is estimated that the central highlands add \$260 million to tourism. Given that "tourism is a major employer in the region" (extract 1), this will lead to a substantial increase in the X component of AD, causing AD to shift to the right. Actual growth results as the equilibrium NI increases.

Victoria's central highlands is also essential to protecting Melbourne's water supply. By stopping logging, the water catchment would be improved and would maximise "water yield and quality" and increase the amount of water that "flows into the dams for the city of Melbourne." (extract 1) These dams will power hydroelectric power stations that generates "cheap, renewable electricity", hence lowering cost of production and shifting SRAS to the right, leading to actual growth as the equilibrium NI increases.

**Government should consider the limitations/unintended consequences of a total ban**

- Government intervention in the form of total ban may be costly to administer and enforce. The administrative costs of administering and enforcing a ban to correct market failure in the market for timber may outweigh the social benefits from the correction. For example, the cost of monitoring the entry of banned products for a large country would be high. Also, it may work against the welfare of the society if the ban (a regulation) results in greater welfare loss (i.e. Area X > Area Y).
- According to Extract 1, native logging and processing in Victoria has helped generate more than \$500 million for the state's economy supporting more than 2,000 jobs. So a total halt/ban on logging can lead to loss in jobs and national income.
- According to Extract 5, the logging ban in Kenya has triggered a 36 percent and 11 percent rise in timber and furniture prices, respectively, in the past year, hitting the local construction industry hard.

**Evaluation**

In conclusion, a rational government should consider the cost, benefit and unintended consequence of the two policies in deciding which one to implement to achieve the best outcome. Both total ban and taxation will face the same problem of high administrative and compliance cost. While taxation aims to bring the equilibrium quantity of timber nearer to the social optimal level, a total ban is a more extreme form of regulation that brings the equilibrium quantity to zero, eliminating any welfare gain that timber can bring to society. Given the importance of timber in producing various products such as furniture and paper, and the number of jobs and national income that the industry supports, a total ban might not be the best policy to tackle market failure in the market for timber. In

	<p>particular, it is likely that area X &gt; area Y in Figure 4, meaning that a total ban on logging might lead to more cost than benefits. Hence, taxation would be a better policy to reduce inefficient allocation of resources in the market for timber.</p>	
<b>L3</b>	<p><b>Consolidate (Application and Analysis)</b> Sound analysis and coherent economic arguments.</p> <p>Discuss whether government should choose taxation over a total ban to tackle inefficient allocation of resources in the market for timber in a clear and accurate manner with application</p> <p>Clarify – give examples from data with more elaboration</p> <p>Consider both sides (Thesis and anti-thesis / total ban and taxation)</p>	<b>7 – 9</b>
<b>L2</b>	<p>Identify – the key points with limited explanation or/and key evidence from case data without much elaboration.</p> <p>Lopsided. Consider only 1 side – either only thesis or anti-thesis, or only addresses total ban or taxation.</p> <p>– no evidence of discussion / superficial consideration of more than 1 side.</p>	<b>4 – 6</b>
<b>L1</b>	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <p>Insufficient scope of discussion, only touches on either only thesis or anti-thesis, or touches on either only total ban or taxation</p> <p>Lack of accuracy in the use of economic concepts, terms or phrasing of explanation.</p> <p>Mainly lifting from extracts without additional market failure analysis or diagram.</p>	<b>1 – 3</b>
<b>E2</b>	<p><b>Evaluative Comment</b> For an evaluation that contains:</p> <p>A synthesis using economic arguments to arrive at <b>relevant</b> judgements/decisions of whether government should choose taxation over a total ban to tackle inefficient allocation of resources in the market for timber.</p> <p>Evaluative comments supported by <b>accurate, logical</b> and <b>clear</b> analysis</p>	<b>2 - 3</b>
<b>E1</b>	<p><b>Relevant</b> judgement(s)/decision(s) (did answer the question) but may not follow from relevant economic arguments. Comment (s) may lack <b>depth, clarity, and logic.</b></p>	<b>1</b>

[45marks]

## HCI H1 Economics Prelims CSQ2 (Macro) 2019

<b>(a)(i)</b>	<b>Using Table 1, compare the changes in Real GDP for China and Singapore over the period.</b>	<b>[3]</b>
	<p><b>Requirement: Meaningful comparison of Real GDP changes with at least one similarity and two differences.</b></p> <ul style="list-style-type: none"> <li>• Both economies experience increase in Real GDP. <i>[1m - similarity]</i></li> <li>• However, China experienced faster Real GDP increase as compared to Singapore. <i>[1m – first difference]</i></li> <li>• And, China’s Real GDP increases at decreasing rate whereas Singapore’s Real GDP increases at increasing rate. <i>[1m – second difference]</i></li> </ul>	
<b>(a)(ii)</b>	<b>State and comment on the likely relationship between Singapore’s Real GDP growth rate and inflation rate between 2016 and 2017.</b>	<b>[3]</b>
	<p><b>Requirement: Identify relationship and comment on likely reason(s).</b></p> <ul style="list-style-type: none"> <li>• Positive relationship <i>[1m]</i></li> <li>• An increase in GDP growth rate is likely to be caused by rising AD (i.e. actual growth). With the Singapore economy likely to be operating near/at full employment, an increase in AD would lead to demand-pull inflation, as the economy encounters supply bottleneck. <i>[up to 2m for elaborated comment]</i></li> </ul>	
<b>(b)</b>	<b>Using AD/AS analysis, explain two intended consequences of rebalancing in the Chinese economy and use an AD-AS diagram to explain why rebalancing might not remove the ‘excess capacity’ in the economy. (Extract 6)</b>	<b>[7]</b>
	<p><b>Requirement for first part: Explain two intended consequences, supported by evidence. [Up to 4 m]</b></p> <p><b>(i) To reduce excess capacity</b></p> <ul style="list-style-type: none"> <li>• Investment used to be the traditional ‘engine of growth’ in China, boosting actual growth.</li> <li>• However, concurrently, it has led to over-allocation of capital goods in the economy resulting in excessive spare capacity.</li> <li>• <i>As mentioned in Extract 6: Rebalancing is needed to avoid any ‘further over-allocation of capital... (reducing) excess capacity in the economy’.</i></li> <li>• Hence, a gradual reduction in investment expenditure to reduce the excess productive capacity is necessary.</li> <li>• At the same time, a corresponding rise in consumption is required to better utilize the existing spare capacity.</li> </ul> <p><b>(ii) To achieve more stable economic growth</b></p> <ul style="list-style-type: none"> <li>• On the other hand, consumption-led growth tends to be more stable as compared to investment driven growth.</li> <li>• <i>As mentioned in Extract 6: ‘Consumption is less prone to ‘boom-and-bust of the business cycle’</i></li> </ul>	

	<ul style="list-style-type: none"> <li>• With consumption replacing investment as the ‘growth driver’, it would lead to less drastic economic upswings and downswings. Thus minimizing any adverse consequences such as heightened cyclical unemployment during downturns.</li> </ul> <p><b>Second part : Explain how rebalancing might <u>not</u> remove excess capacity [Up to 3m]</b></p> <ul style="list-style-type: none"> <li>• Investment has previously created excess capacity in China, and while consumption has increased, it has not reached its ‘full potential’ due to high savings rate in China.</li> <li>• As a result, the overall rise in AD is probably still insufficient to utilize the spare resources and achieve the full employment output.</li> <li>• Thus, the excess capacity has not been removed in China. (Refer to diagram.)</li> </ul> <p><b>Insert AD-AS diagram showing excess capacity.</b></p>	
<b>(c)</b>	<b>Using Extracts 9 and 10, explain and comment on the impact of digital transformation on the various types of unemployment.</b>	<b>[8]</b>
	<p><b>Requirement of Question:</b>  <b>Explain how Structural, Demand-deficient and Frictional unemployment can be impacted using relevant evidence [Up to 6m]. And, comment on the likely extent and/or nature of the impact [Up to 2m].</b></p> <p><b>(i) Explain likely impact on Demand-deficient Unemployment</b></p> <ul style="list-style-type: none"> <li>• Extract 9 stated that: “As digital technologies continue to play a bigger role in the economy, ... creation of higher-value jobs”</li> <li>• The increase in G, I on internet infrastructure and boost C through e-commerce, leading to overall increase in AD.</li> <li>• AD increases leads to unplanned decrease in stocks. As firms increase production levels in the next period, they would hire more workers, leading to an increase in employment.</li> <li>• Thus, reducing Demand-deficient unemployment.</li> </ul> <p><b>(ii) Explain impact on Structural Unemployment</b></p> <ul style="list-style-type: none"> <li>• As mentioned in Extract 9: “increased educational and training opportunities”</li> <li>• This is likely to reduce Structural unemployment - Increased skills training and education – Re-skilling workers to take up new digital jobs created.</li> <li>• However, when the workforce is not suitably trained and educated, Digital transformation (DT) may lead to job replacements and skills mismatch. (Extract 10)</li> <li>• The resultant impact is inconclusive.</li> </ul> <p><b>(iii) Explain impact on Frictional Unemployment</b></p> <ul style="list-style-type: none"> <li>• DT can possibly reduce Frictional unemployment.</li> <li>• Workers in between jobs or fresh graduates searching for work can take up digital ‘freelance jobs’ (Extract 9), assuming that they are suitably equipped.</li> </ul>	

	<ul style="list-style-type: none"> <li>• With better internet connectivity, job information is made more available thus reducing imperfect information in the job market. <i>(This point is not directly provided in Extract but acceptable as an inference.)</i></li> </ul> <p><b><i>For evaluative comments, candidates can briefly comment on which type of unemployment is more impacted and nature of impact etc.</i></b></p> <ul style="list-style-type: none"> <li>• E.g. Exact impact on structural unemployment seems less certain as it depends on the workers' ability to take on new digital jobs created. This depends on education level of workforce and presence of relevant government policies such as SkillsFuture to upgrade skills level.</li> </ul>	
<b>(d)</b>	<b>Discuss whether Asian economies can achieve inclusive growth through digital transformation.</b>	<b>[10]</b>
	<p><b><i>Requirement of Question:</i></b>  <b><i>Discuss whether Asian economies like Singapore and China can achieve various aspects of inclusive growth via digital transformation in the economy. To achieve sufficient scope, answers should tackle adequate aspects of Inclusive Growth and various ways digital transformation by which can impact inclusive growth.</i></b></p> <p><b><u>Introduction</u></b></p> <ul style="list-style-type: none"> <li>• Inclusive growth (IG) means <u>sustained economic growth</u> that creates <u>employment opportunities</u> and helps in <u>reducing poverty</u>. It means having <u>access to essential services</u> in health and education by the poor. It includes providing <u>equality of opportunities</u>, empowering people through education and skill development.</li> <li>• Asian economies in this context refers to China, a large developing economy and Singapore, a small and relatively developed economy. As indicated by the relatively high Gini Coefficient in Table 2, both Asian economies are facing challenges in inclusive growth.</li> <li>• Based on the evidence in various extracts, Digital transformation (DT) is unparalleled in terms of the scope, scale, and speed in transforming the Asian economies. The impacts of the digital technologies are generally felt across many sectors of the economy and has extensive impact on IG.</li> </ul> <p><b><u>Thesis – Asian Economies can achieve IG as economic growth is boosted</u></b></p> <ul style="list-style-type: none"> <li>• It can be argued that Asian economies like China and Singapore can achieve IG through DT due to sustained economic growth.</li> <li>• Extracts 7- 10 indicate that DT can cause significant rise in various components of AD leading to increase in real national income leading to Actual Growth. For instance, in China:</li> <li>• <i>There was rapid rise in consumption as indicated in Extract 7, mobile payments' penetration rate which would enhance consumption spending has grown from just 25% in 2013 to 68% in 2016.</i></li> <li>• <i>There was also significant increase in government spending as the Chinese government spent 430 billion yuan in 2015 to beef up the internet infrastructure. (Extract 7)</i></li> </ul>	

	<ul style="list-style-type: none"> <li>• In totality, there would be a significant increase in autonomous spending and aggregate demand in China due to DT which generated a more than proportionate increase in the national income via the multiplier effect.</li> <li>• Through generating economic growth, DT can generate funds for Asian governments to implement fiscal measures to improve IG.</li> <li>• Actual growth caused by DT can generate increase in household income. And with progressive tax structure, this means larger tax revenue collected by the governments to fund the improvements in merit goods and social securities standards for the poor.</li> <li>• This is especially needed in China given its uneven spread of economic benefits across such a vast and diverse economy.</li> <li>• Tax revenue collected can also be used to fund education and skills training (like SkillsFuture in Singapore) for the lower-skilled workers to adapt to the new digital technologies, ensuring that they do not fall behind in terms of skill-set and improve wage growth.</li> <li>• Cumulatively, the above fiscal measures would reduce income gap and enhance access to merit goods for the poorer segment of the population.</li> <li>• In addition, China's rural 'internet connectivity' would be extensively boosted by 2020 (Extract 7).</li> <li>• This can bring about substantial gains in terms of consumption (via mobile payments and ecommerce) on the demand-side and better labour market information flow in the rural areas on the supply-side.</li> <li>• This rise in connectivity and boosted consumption can help to create jobs and improve productivity gains in rural areas.</li> <li>• Also, China can reduce its rural 'underemployment' as the internet connectivity improves which is made possible by improving better information flow in the labour market. Under-utilized labour in the rural areas can be better employed and channeled towards the emerging digital sector.</li> <li>• These improvements in connectivity and productivity can generate potential wage growth for the workers in the rural areas and reduce rural-urban income gap.</li> </ul> <p><b><u>AT - Economies may not achieve IG due to Income divide / Structural un-</u></b></p> <ul style="list-style-type: none"> <li>• On the other hand, it can be argued that IG cannot be achieved via DT alone, especially as Extract 9 expresses strong evidence that DT might actually worsen income inequality.</li> <li>• DT might result in tech firms gaining excessive market power and wealth, leading to a greater share of the gains from economic growth to be concentrated with these larger firms rather than shared with the rest of the society.</li> <li>• And, instead of achieving IG, DT might cause job losses in the traditional non-digital sectors.</li> <li>• For instance, the more traditional industries like brick-and-mortar retail stores can be replaced by ecommerce, which would be more skill-biased and require more educated and IT-trained workers.</li> <li>• Wage gaps between the skilled and unskilled can worsen, deteriorating IG.</li> </ul>	
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**Possible Evaluation/Conclusion**

- Therefore, whether IG can be achieved in the Asian economies very much hinges on the pervasiveness of DT and presence of government policies to manage the potential shortcomings in these economies.
- Both China and Singapore seems well poised to achieve IG due to the pervasiveness of digital penetration in the economies and their strong economic fundamentals.
- Nonetheless, being a relatively developed and small (and nimble) economy, Singapore seems to in a stronger position to tap on DT.
- For instance, Singapore’s education standard is extremely high by international standards, and its internet penetration is almost complete. With absence of any poor rural population, IG can be more easily achieved.
- Also, Singapore government is forward-looking and has implemented effective policies like SkillsFuture to minimize any fallout from DT like structural unemployment.
- In contrast, China’s economy is much bigger and more complex.
- And IG is potentially hampered by the patchy standards of merit goods and substantial rural-urban income divide.
- To fully realize IG, larger Asian economies like China need stronger government interventions to strengthen its enabling conditions for IG, such as like education standards and improving income redistribution policies (like increasing corporate taxes for tech firms). This is to ensure that the massive rural populations and lower income groups do not fall behind economically.

<b>L2</b>	<p><b>Consolidate (Application and Analysis)</b> Sound analysis and coherent economic arguments.</p> <p>Discuss the impact on inclusive growth from digital transformation in a clear and accurate manner with application.</p> <p>Clarify – give examples from data with more elaboration.</p> <p>Consider both sides (Thesis and anti-thesis).</p>	<b>4 – 7</b>
<b>L1</b>	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis.</p> <p>Insufficient scope of discussion, only touches on either only Thesis or Anti-thesis.</p> <p>Lack of accuracy in the use of economic concepts, terms or phrasing of explanation.</p> <p>Mainly lifting from extracts without economic analysis.</p>	<b>1 – 3</b>
<b>E2</b>	<p><b>Evaluative Comment</b> For an evaluation that contains:</p> <p>A synthesis using economic arguments to arrive at <b>relevant</b> judgements/decisions on whether Asian economies can achieve inclusive growth via digital transformation.</p>	<b>2 -3</b>

	Evaluative comments supported by <b>accurate, logical</b> and <b>clear</b> analysis		
	<b>E1</b> <b>Relevant</b> judgement(s) (did answer the question) but may not follow from relevant economic arguments. Comment (s) may lack <b>depth, clarity, and logic flow</b> .	<b>1</b>	
<b>(e)(i)</b>	<b>From Table 1, identify and explain one economic indicator that is the most useful in assessing standard of living.</b>	<b>[2]</b>	
	The Human Development Index (HDI). <i>[1m]</i>  HDI is a composite index of life expectancy, education, and per capita income indicators. Thus HDI is the most useful indicator for SOL as it encompasses both material and non-material indicators for standard of living. <i>[1m]</i>		
<b>(e)(ii)</b>	<b>Discuss the view that governmental efforts to promote digital transformation is the best approach to achieve faster growth in standard of living for a country.</b>	<b>[12]</b>	
	<p><b><u>Introduction</u></b></p> <ul style="list-style-type: none"> <li>The issue at hand is to discuss the view that promoting digital transformation (DT) by governments can achieve <i>faster growth</i> in living standards based on the information provided.</li> <li>On whether DT is the <i>best approach</i>, at least one alternative approach should be discussed.</li> <li>'<i>Faster growth in SOL</i>' would entail <i>more rapid improvements</i> in the SOL, in the material as well as non-material aspects.</li> </ul> <p><b><u>Thesis 1 – DT can be a good approach to achieve faster growth in SOL</u></b> <b><u>Thesis 1a – Faster growth in Material aspects of SOL</u></b></p> <ul style="list-style-type: none"> <li>It can be argued that DT can lead to <i>faster growth</i> in material aspects of standards of living.</li> <li>This is best indicated by a <i>rapid rise</i> in the Real GDP per capita.</li> <li>Extracts 7 - 10 indicate that DT can cause significant rise in various components of AD. Putting the mentioned demand-side changes together, there would be a significant increase in autonomous spending in China which generated a more than proportionate increase in the national income via the multiplier effect (<i>Actual growth as presented in part d</i>).</li> <li>In order to properly judge the improvements in material aspects of SOL, we need data for <u>Real national income per capita</u>. The real per capita national income figures are obtained by dividing GDP by the population size.</li> <li>Based on the data, Asian economies' population growth is slowing/decreasing and this is likely to lead to a <u>faster increase</u> in per capita national income.</li> <li>This means higher purchasing power for the average resident to enjoy a larger basket of goods and services, enhancing the SOL in the material aspects.</li> </ul>		

- Hence, given the significant rise in real national income and coupled with the aging population, it is likely that there is a *faster growth* in SOL due to DT.
- Furthermore, DT becomes even more important in accelerating per capita national income and material aspects of SOL as China is facing slowing growth due to ongoing rebalancing efforts and weakening external outlook.

**Thesis 1b – Improvements in the Non-material aspects of SOL**

- To be more holistic in assessment, the discussion of SOL should always include the non-material aspects of life.
- Though the information given did not directly include that, we can infer from a few pieces of evidence.
- In Extract 7 expressed the view that digitization can help to improve efficiency and we can infer that productivity should increase. This increase in output per worker should lead to shorter working hours and more leisure time, indicating a higher non-material SOL.
- Extract 7 also mentioned that more innovative products can be created via DT. For instance, through AI and cloud computing technologies. This can cause consumers to gain *non-price* benefits, for example, wider product choices and greater convenience due to the innovations leading to better SOL non-materially.

**AT1 - Limitations of DT in promoting faster growth in SOL:**

- However, even when real GDP per capita increase with DT, if there is worsening income distribution, we cannot say then that the average resident is better off. There are indications that income distribution might be adversely affected by DT. As stated in Extract 10, DT could cause income disparity to grow, especially in developing Asian countries where income gap and unequal access to education is persistent.
- Besides, there is time lag in DT which might delay the growth of SOL. In Extract 9, it was mentioned that in Singapore, 0.6% GDP growth can only materialize in 2021 and digital technologies are only poised to make up 60% of Singapore's GDP in the year 2021. Time lag can seriously hamper faster growth of SOL.
- Also, DT cannot directly solve China's incomplete coverage of social security and merit goods insufficiency especially in rural areas affects non-material aspects of SOL (Extract 6)

**AT2 – Alternative policy to achieve faster growth of SOL**

- Hence, due to time lag and various limitations of DT, faster growth of SOL is not guaranteed.
- Instead, implementation of timely Expansionary Fiscal Policy to boost income and enhance merit goods can probably achieve growth in SOL in a shorter timeframe as compared to DT.
- For instance, a fall in income tax rate will increase the disposable income of consumers, so purchasing power increases, which in turns increases the consumption. This can more directly impact SOL materially as compared to DT as the government put more disposable income into the hands of residents directly.
- On the other hand, increase in government expenditure on education and health services can more directly impact the non-material aspect of SOL.

- However, while the effectiveness of Expansionary FP sounds promising, the adverse impact of Asian economies' ageing population (Extract 7) on the effectiveness of FP cannot be ignored.
- Ageing population reduces the scope for expansionary FP due to diminishing tax revenue and increasing government spending on benefits and healthcare for the senior citizens.

**Overall Evaluation / Conclusion**

- In the short run, to achieve faster growth in SOL, *more timely and expedient* fiscal intervention seems necessary as DT takes time to materialize and permeate its full benefits in the economy.
- However, in the current climate of economic slowdown and ageing population, fiscal intervention in raising SOL would not be sustainable in the long run.
- Thus, DT still is the best approach in the long term due to its pervasiveness and transformational effects on many sectors in the economy.
- But in the short-term, fiscal intervention seems unavoidable.
- And, government might need to find creative solutions (like raising GST) to fund the fiscal interventions to ensure faster growth of SOL in the short term.

<b>L3</b>	<b>Consolidate (Application and Analysis)</b> Sound analysis and coherent economic arguments.  Discuss with at least one alternative policy/measure with accurate manner with application.  Clarify – give examples from data with more elaboration.  Consider both sides (Thesis and anti-thesis).	<b>7 – 9</b>
<b>L2</b>	Identify – the key points with limited explanation or/and key evidence from case data without much elaboration.  Lopsided – No evidence of discussion / superficial consideration of more than 1 side.	<b>4 – 6</b>
<b>L1</b>	For an answer that demonstrates knowledge but lacks understanding, application and analysis:  Insufficient scope of discussion, only touches on either only thesis or anti-thesis.  Lack of accuracy in the use of economic concepts, terms or phrasing of explanation.  Mainly lifting from extracts without additional analysis.	<b>1 – 3</b>
<b>E2</b>	<b>Evaluative Comment</b> For an evaluation that contains:	<b>2 – 3</b>

		A synthesis using economic arguments to arrive at <b>relevant</b> judgements.  Evaluative comments supported by <b>accurate, logical</b> and <b>clear</b> analysis		
	<b>E1</b>	<b>Relevant</b> judgement(s)/decision(s) (did answer the question) but may not follow from relevant economic arguments. Comment (s) may lack <b>depth, clarity, and logic</b> .	<b>1</b>	





JURONG PIONEER JUNIOR COLLEGE

## JC2 Preliminary Examination 2019

**ECONOMICS**  
**Higher 1**

**8823/01**

**19 September 2019**

Paper 1

**3 hours**

Additional materials:      Answer Paper

### READ THESE INSTRUCTIONS FIRST

Write your Centre number, index number and name on all the work you hand in.

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

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

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

Answer **all** questions.

At the end of the examination, fasten all your work securely together.

Fasten your answers to each question **SEPARATELY**.

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

If there are part questions you did not attempt, please write the question number and part in The margins before you submit your answers. (*i.e. if did not complete 2b, indicate 2b in the margin of the answer script that you submit for question 2.*)

You are advised to spend several minutes reading the question and planning your answers before you begin writing.

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

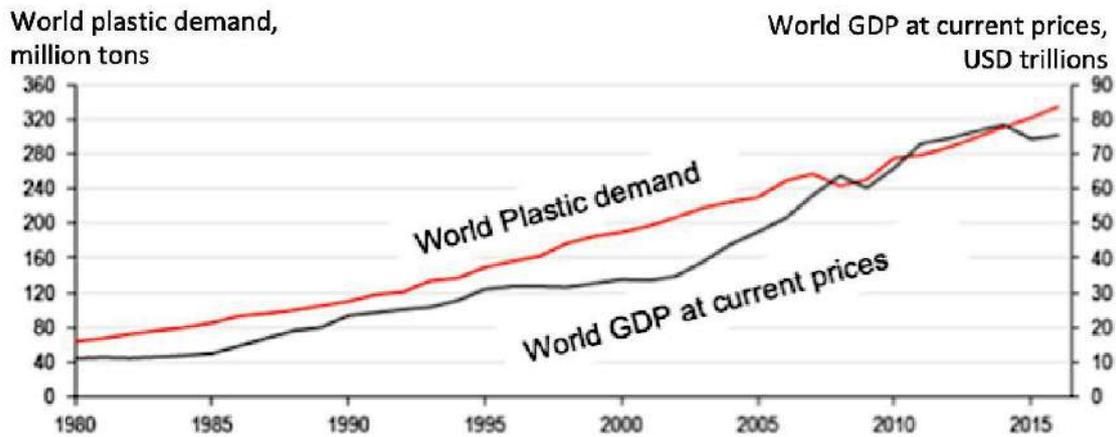
This document consists of **9** printed pages and **1** blank page.

Answer all questions.

### Question 1

### The Market for Plastics

Figure 1: Plastic demand vs GDP growth



Source: PlasticsEurope, IMF

#### Extract 1: World's plastic binge 'as dangerous as climate change'

A million plastic bottles are bought around the world every minute and the number will jump another 20% by 2021, creating an environmental crisis some campaigners predict will be as serious as climate change. The demand, equivalent to about 20,000 bottles being bought every second, is driven by an apparently insatiable desire for bottled water and the spread of a western, urbanised “on the go” culture to China and the Asia Pacific region. Most plastic bottles used for soft drinks and water are made from polyethylene terephthalate (Pet), which is highly recyclable. But as their use soars across the globe, efforts to collect and recycle the bottles to keep them from polluting the oceans, are failing to keep up. Fewer than half of the bottles bought in 2016 were collected for recycling and just 7% of those collected were turned into new bottles. Instead most plastic bottles produced end up in landfill or in the ocean.

Source: The Guardian, 28 June 2017

#### Extract 2: \$180bn investment in plastic factories feeds global packaging binge

The global plastic binge which is already causing widespread damage to oceans, habitats and food chains, is set to increase dramatically over the next 10 years after multibillion dollar investments in a new generation of plastics plants in the US. Fossil fuel companies are among those who have ploughed more than \$180bn since 2010 into new “cracking” facilities that will produce the raw material for everyday plastics from packaging to bottles, trays and cartons. The new facilities – being built by corporations like ExxonMobil Chemical and Shell Chemical – will help fuel a 40% rise in plastic production in the next decade, according to experts, exacerbating the plastic pollution crisis.

Source: The Guardian, 28 December 2017

#### Extract 3: Negative environmental effects of plastics

At least 8 million tonnes of plastics leak into the ocean each year — which is equivalent to dumping the contents of one garbage truck into the ocean per minute. According to Valuing Plastic, the annual damage of plastics to marine ecosystems is at least USD 13 billion per year and Asia-Pacific Economic Cooperation (APEC) estimates that the cost of ocean plastics to the

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tourism, fishing and shipping industries was USD 1.3 billion in that region alone. In addition to the direct economic costs, there are potential adverse impacts on human livelihoods and health, food chains and other essential economic and societal systems. In addition, with 6% of global oil production devoted to the production of plastics (of which packaging represents a good quarter), considerable greenhouse gas emissions are associated with the production of plastics. Plastics also contain harmful additives which when leaked out to the environment will pose harmful effects on human health.

Source: The New Plastics Economy – Rethinking the future of plastics, 19 January 2016

#### **Extract 4: China's waste import ban upends global recycling industry**

**Table 1: Export of Recyclable Materials (million tons) from California to China and All other countries**

<b>Year</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>China</b>	10.9	10.3	10.2	9.3	8.1
<b>All other countries</b>	7.8	7.8	6.3	5.7	6.5
<b>Total</b>	18.7	18.1	16.4	15	14.6

For years China was the world's top destination for recyclable trash, but a ban on certain imports has left nations scrambling to find new dumping grounds for growing piles of garbage. The decision was announced in July and came into force on January 1, giving companies from Europe to the United States barely six months to look for other options, and forcing some to store rubbish in parking lots.

The ban bars imports of 24 categories of solid waste, including certain types of plastics, paper and textiles. "Large amounts of dirty... or even hazardous wastes are mixed in the solid waste that can be used as raw materials. This polluted China's environment seriously," the environment ministry explained in a notice to the World Trade Organisation.

In 2015 alone, the Asian giant bought 49.6 million tonnes of rubbish, according to the latest government figures. The European Union exports half of its collected and sorted plastics, 85 per cent of which goes to China. Ireland alone exported 95 per cent of its plastic waste to China in 2016. Over in the United States, states such as California exports a third of the recyclable material it collects mainly to China. Some are now looking at emerging markets elsewhere such as India, Pakistan or south-east Asia, but it could be more expensive than shipping waste to China. Sending recyclables to China is cheaper because they are placed on ships that would "otherwise be empty" when they return to the Asian country after delivering consumer goods in Europe, said Mr Simon Ellin, chief executive of the Britain-based Recycling Association. In addition, many alternate countries may not yet be up to the task of filling China's enormous shoes, since "processing capacity doesn't develop overnight." The ban risks causing a "catastrophic" environmental problem as backlogs of recyclable waste are instead incinerated or dumped in landfills with other refuse.

The ban has also created challenges for Chinese companies dependent on foreign waste. "It will be very hard to do business," said Mr Zhang Jinglian, owner of the Huizhou Qinchun plastic recycling company in southern Guangdong province. More than half their plastics were imported, and as prices for such raw materials go up, production will be reduced by at least a third, he said. He had already let go a dozen employees. Others, such as Nantong Heju Plastic Recycling in coastal Jiangsu province, will "no longer do business" at all, a representative said.

But at the same time, the ban could jolt China into improving its own patchy recycling systems, allowing it to reuse more local materials, said Greenpeace plastics expert Liu Hua. "In China at the moment, there isn't a complete, legal and regulated recycling system in place," he said, with even

big cities like Beijing reliant on illegal scavengers. "When there aren't resources coming from abroad, there's a greater likelihood of us improving our own internal recycling."

In Europe, the ban could also have the positive effect of prompting countries to focus on developing domestic recycling industries. On Tuesday, the EU unveiled plans to phase out single-use plastics and make all plastic packaging recyclable by 2030 through legislation.

Sources: Adapted from The Straits Times, 21 January 2018 and <https://www.calrecycle.ca.gov/markets/nationalsword>, accessed 2 September 2019

#### **Extract 5: EU rules out tax on plastic products to reduce waste**

The EU has ruled out penalties on single-use plastic products, in favour of raising public awareness of the damage consumer plastics are doing to the world's oceans. Frans Timmermans, vice president of the European commission, said a tax would "not be sustainable", but that changing the way plastic was produced and used could work. Timmermans rejected outright charges and taxes on single-use plastic, and was reluctant to consider legislative measures to ban single-use plastic such as straws and cutlery and make all plastic packaging recyclable. Instead, he called for public information campaigns on the problems plastics cause. Consumers would accept "less flashy" and less aesthetically pleasing packaging, if they understood it would help remove pollution from the oceans.

Source: The Guardian, 6 October 2017

#### **Extract 6: How much would it cost to switch to plastic alternatives?**

Many of the companies attempting to tackle the amount of plastic waste generated by their products admit it will eat into their profits. Coca-Cola, for example, produces 38,250 tonnes of plastic packaging in the UK each year and estimates indicate it sells more than 110 billion single-use plastic bottles globally. The company has pledged to double the amount of recycled material in its plastic bottles in the UK and is trialing refillable bottles. Although it refuses to give details, Coca-Cola says these efforts will increase costs.

"Food costs are going to increase – there can be no doubt about that," says Dick Searle, chief executive of the British Packaging Federation, which represents the industry in the UK. Using glass milk bottles instead of plastic, for example, can lead to additional costs for producers.

Source: BBC, 6 July 2018

**Questions**

- (a) Using Figure 1, support the view that products made of plastics are normal goods. [2]
- (b) Using Table 1, compare the export of recyclable materials from California to China and all other countries **relative to the total** from 2013 to 2017. [2]
- (c) Using a supply and demand diagram, explain how the spread of an urbanised “on the go” culture to China and the Asia Pacific region and investments in a new generation of plastics plants in the US affect the market for plastics. [6]
- (d) With reference to Extract 3, explain how **both** the consumption and production of plastics lead to market failure. [6]
- (e) With reference to Extract 4, discuss how China’s waste import ban will affect sustainable growth in China. [9]
- (f) With reference to Extract 4, explain the likely value of the price elasticity of supply of recycled waste in the alternate emerging markets such as India, Pakistan or south-east Asia. [3]
- (g) Explain how the price elasticity of demand will determine the amount of tax revenue that EU will raise when it imposes a tax on single-use plastics. [5]
- (h) Using evidence from the case study and/or your own knowledge, discuss whether legislation or public information campaign is a more appropriate policy to achieve greater efficiency in the plastics market in EU. [12]

[Total: 45]

## Question 2 Challenges in the United Kingdom (UK) and Singapore economies

**Table 2: UK, selected economic indicators (2014-2017)**

	2014	2015	2016	2017
<b>Real GDP (%)</b>	2.9	2.3	1.8	1.8
<b>Unemployment, (% of total labour force)</b>	6.1	5.3	4.8	4.3
<b>Budget Balance (in pound billion)</b>	-98.6	-79.6	-57.0	-37.6

Source: World Bank and Office of National Statistics (ONS)

**Table 3: Singapore, selected economic indicators (2014-2017)**

	2014	2015	2016	2017
<b>Real GDP (%)</b>	3.9	2.9	3.0	3.7
<b>Unemployment, (% of total labour force)</b>	3.7	3.8	4.1	3.9
<b>Budget Balance (in S\$ million)</b>	571	-4050	6125	10,861
<b>Gini coefficient</b>	0.430	0.463	0.458	0.459

Source: World Bank

### Extract 7: How has the UK economy fared since the Brexit vote?

Before the Brexit referendum last June, many economists produced gloomy forecasts which have since been proved wrong. Consumers' confidence has not suffered, and by and large, things have gone on as before. However, the UK has not actually left the EU yet - the real change may only happen once it does. The current uncertainty over what form Brexit will take is an issue for many firms when it comes to investment planning. There are hints that Brexit uncertainty is already hitting business confidence.

Importantly, many forecasts of immediate economic gloom if the UK voted to leave the EU were proved wrong because they did not take into account possible compensatory action by the Bank of England in the wake of a Brexit vote. After the referendum the Bank of England took steps to boost the economy. In particular it cut interest rates from 0.5% to 0.25% in August, taking UK rates to a new record low. Rates are also unlikely to go up any time soon. This month's Budget provided little stimulus for the economy via tax breaks or spending announcements, so the Bank is more likely to keep rates on hold, because raising them could affect growth.

Source: BBC News, 28 March 2017

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### **Extract 8: Another challenge for the UK economy- low productivity**

The productivity of UK workers has fallen and this represented a continuation of the UK's productivity puzzle, referring to the relative stagnation of labour productivity since the financial crisis. An economy can grow without any improvements in productivity, by simply adding people to the workforce, be they European Union (EU) migrant workers or pensioners choosing not to retire yet. And that is what the UK economy has been doing - without improving the amount each worker produces. The reason why average wages have not improved much in the same period was due to flat productivity. Lack of productivity growth has raised concerns for businesses and policymakers.

Productivity has always been a long-term challenge, which is why investment must be raised to step up UK's economic performance. The UK government has since announced £23billion for infrastructure, research and housing, while also reforming technical education so that her economy works for everyone. As the UK's capacity to raise long run living standards seems to be going backwards, there is a need for a radical and transformative industrial strategy.

Source: BBC News, 6 October 2017

### **Extract 9: How can the UK solve its productivity puzzle?**

Economists concur that the real determinant of the prosperity of a population over time is probably its productivity. The UK's comparatively poor productivity rate is probably the real reason why UK workers are getting pitiful pay increases and real wages are in decline. This brings us to the other side of the productivity equation: technology. Constant technological innovation means companies can produce more, or provide services more widely, for less effort. Companies get richer and create new jobs, which are paid at higher rates. A counter-narrative says the rise in automation will ultimately destroy jobs. This would leave a few rich people at the top and a lot of menial workers at the bottom of the ladder who are poorly paid. Therefore the government should direct more resources towards upskilling the existing workforce which in turn would help solve productivity problems and creates more inclusive and sustained growth. In short, technology and infrastructure investment are necessary but not sufficient in raising productivity unless it is accompanied with upskilling programmes.

Source: Adapted from [www.theweek.co.uk](http://www.theweek.co.uk), 6 July 2017

### **Extract 10: Singapore's economic challenges and the way ahead**

Singapore, one of the greatest economic success stories in history, is losing its competitiveness. While the economy continues to grow, the pace of that growth has stagnated. At the core of this tempering of growth is a slowdown in productivity and this is one of two major challenges facing the economy. Though wages continue to rise, overall labour productivity is on the decline.

Thus, to raise productivity, Singaporean workers and companies need to deepen skills, strengthen enterprises, build international connections, digitalise and develop a vibrant city. For example, a new initiative called "SMEs Go Digital" is rolled out to help develop industry digital plans to help small and medium-sized enterprises (SMEs) improve productivity, including in retail, food services, logistics and cleaning. However, many Singaporean companies are not embracing all the tools at hand for improving productivity.

On top of slowing productivity, Singapore is also facing a rise of global uncertainties that makes it harder for Singapore to look overseas for support in lifting GDP growth and employment. The prospect of less trade in Europe and the United States will slow down cross-border flows of goods, services and capital.

Sources: Adapted from The Straits Times, 21 February 2017 &  
The Straits Times, 9 June 2017

**Extract 11: Lifelong learning and training for workers**

For the workers, jobs are being created and made redundant so quickly and the economy disrupted so frequently that it has become a difficult task to form major policies for training and retraining workers, and designing jobs for them. Persuading workers that they need to reskill is an uphill task. Pushing companies to train their workers when they are facing challenges themselves is equally hard.

Hence, the Singapore Government has relied on a major policy called “Adapt and Grow” to change the approach to jobs and training in preparing Singaporeans and Singapore for the future economy. To help individuals transit to new jobs and industries, wage and training support are available through this “Adapt and Grow” initiative, where up to 80% of these workers’ wages and training fees are paid for by the government while they undergo training before taking up new jobs in the growing industries

Sources: Adapted from The Straits Times, 11 February 2018 &  
The Straits Times, 16 September 2017

## Questions

- (a) Compare the change in Singapore's real GDP between 2014 and 2017 with that of the UK over the same period. [3]
- (b) (i) Describe the change in the UK's budget balance over the period 2014 to 2017. [2]  
 (ii) With reference to Table 2, comment on how economic growth could impact the UK's budget balance. [5]
- (c) Using an AD/AS diagram, explain how the uncertainty from Brexit could impact the UK economy in the short run and long run. [5]
- (d) Extract 8 mentions "lack of productivity growth has raised concerns for businesses and policymakers".  
 Explain how a lack of productivity growth has raised concerns for businesses and policymakers. [6]
- (e) Extract 8 mentions that "investment must be raised to step up UK's economic performance. The UK government has since announced £23billion for infrastructure and research".  
 Explain **one** limitation of the above approach. [2]
- (f) After the referendum the Bank of England took steps to boost the economy. In particular, it cut interest rates from 0.5% to 0.25% in August, taking UK rates to a new record low.  
 Discuss the factors that the UK government would consider before the implementation of an expansionary monetary policy. [10]
- (g) The Singapore Government has relied on major policies such as "SMEs Go Digital" and "Adapt and Grow" to prepare Singapore for the future.  
 In view of the challenges facing the Singapore economy, discuss whether such policies are the most appropriate in raising the standard of living in Singapore. [12]

[Total: 45]

- End of Paper -

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**Question 1: The Market for Plastics**

- (a) Using Figure 1, support the view that products made of plastics are normal goods. [2]

Suggested answer:

From Figure 1, as world income increases, demand for plastics also rises to make more plastic products. This suggests that the products made of plastics are normal goods since there is a positive relationship between demand for plastic products and income.

- (b) Using Table 1, compare the export of recyclable materials from California to China and all other countries **relative to the total** from 2013 to 2017. [2]

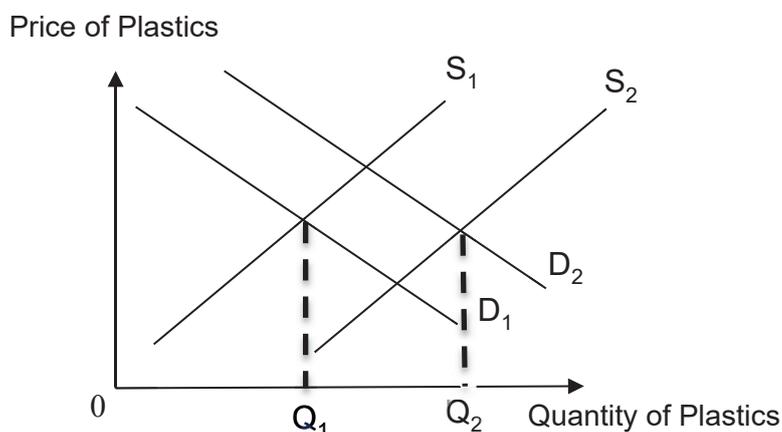
Suggested answer:

Exports of recyclable materials to China fell at faster rate relative to the total while exports to all other countries at a slower rate relative to the total.

As a result, proportion of export of recyclable materials from California to China out of total fell while proportion of export of recyclable materials from California to all other countries out of total rose.

- (c) Using a diagram, explain how an urbanised “on the go” culture to [China](#) and the Asia Pacific region and investments in a new generation of plastics plants in the US affect the market for plastics. [6]

Suggested answer:



Change in taste and preference is one of the factors affecting demand for plastics. An urbanised “on the go” culture to China and the Asia Pacific region changes the taste and preferences of the way consumers consume food. This causes the demand for plastics cups, utensils to rise and hence the demand for plastics. Demand for plastics shifts rightwards from D<sub>1</sub> to D<sub>2</sub>.

Size of industry is one of the factors affecting supply for plastics. As there is a rise in investments in a new generation of plastics plants in the US, this increases the number of producers in the market for plastics, increasing the size of the industry. Hence, supply for plastics rises and shifts rightwards from S<sub>1</sub> to S<sub>2</sub>.

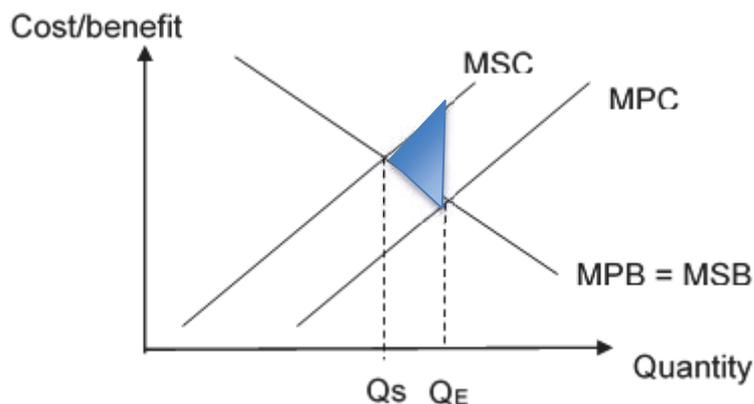
With a rise in demand and supply for plastics, equilibrium quantity of plastics rises. However, the change in equilibrium price is uncertain depending on the extent of change of demand and supply.

- (d) With reference to Extract 3, explain how **both** the consumption and production of plastics lead to market failure. [6]

Suggested answer:

Market failure occurs when the free market fails to achieve efficiency. Negative externalities occurs when the production or consumption of a good incur an external cost to the third party who are not directly involved in the consumption or production of the good.

The production of plastics using new “cracking” facilities will produce the raw material for everyday plastics from packaging to bottles, trays and cartons which will increase the plastic pollution. As a result, it causes harmful emission of air into the atmosphere. This in turn affect the health of the residents living around the region who are the third party not involved in the production of plastic products. These residents incur higher healthcare cost which are not borne by the producers of plastics. Hence, due to the marginal external cost on third party, marginal social cost (MSC) of producing plastics is greater than the marginal private cost (MPC) (e.g. labour cost). Assuming no positive externalities,  $MPB=MSB$ . Firms will produce  $Q_E$  amount of plastics where  $MPC$ =marginal private benefit (MPB) but the socially optimal level of plastics is at  $Q_S$  where  $MSC$ =marginal social benefit (MSB) as shown in the diagram below.



Thus,  $Q_E > Q_S$  represents an over-production of plastics causing  $MSC > MSB$  and hence leading to loss of society welfare as shown by the shaded area. Thus, negative externalities caused by the production of plastics leads to market failure.

Similarly, consumption of plastic led to dumping of used plastics products which leaks into the ocean as mentioned in extract 3. This imposes negative externalities on the fishermen as the plastic pollution caused fishes to die and lower the catch and revenue of fishermen. Thus, once again,  $MSC > MPC$  from consumption of plastics products, causing an over-consumption of plastic products, leading to loss of society welfare.

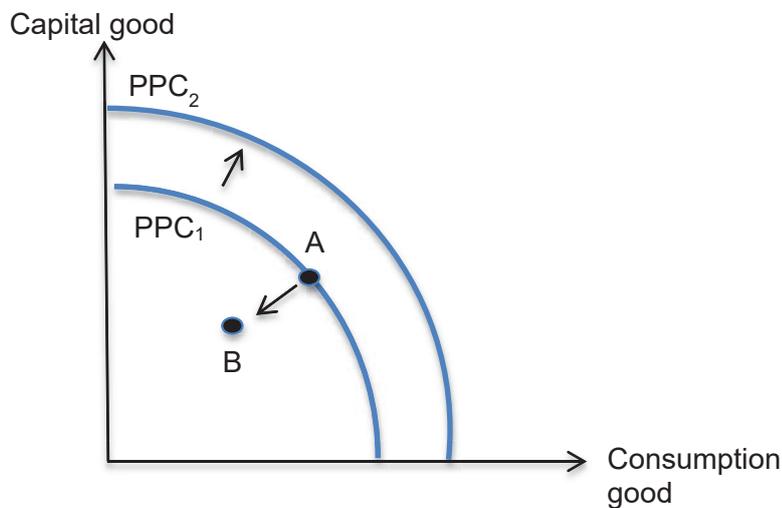
- (e) With reference to Extract 4, discuss how China’s waste import ban will affect sustainable growth in China. [9]

Suggested answer:

Sustainable growth is defined as the rate of growth that can be maintained without creating other significant economic problems (such as depleted resources and

environmental problems), particularly for future generation. To achieve sustained economic growth, a country must enjoy both actual and potential growth as well as minimises the negative impact of economic growth on the environment.

In the short run, China's waste import ban will affect firms in China dealing with recycling business. As foreign waste is one of the raw materials for recycling products, this will increase the prices of such raw materials which will increase the unit cost of production. Hence, supply will shift to the left leading to the firm cut back on production and lay off workers as evidence in extract 4 where one third of the production is reduced and dozens of employees were retrenched. Some firms which are not able to sustain their profitability will have to shut down and this leads to higher unemployment. There will be unemployment of resources in the economy and the economy will be operating from point A to point B as shown in the PPC diagram. The economy will experience a fall in actual growth.



In the long run, the ban will help to reduce pollution in the environment of China and force China to improve their recycling methods using new technologies. Instead of relying on imported recycled waste, China could rely more on domestic recycled waste. This will lead to a cleaner environment in the country as it helps to improve China's existing patchy recycling system. With a cleaner environment, this could lead to a healthier and more productive workforce in China. Hence, China's PPC will shift outwards from  $PPC_1$  to  $PPC_2$  leading to higher potential growth. The expansion of the domestic recycling industry in the long run will also lead to higher employment and actual growth. Hence, sustainable economic growth can be achieved in the long run.

In conclusion, the waste import ban is likely to affect actual economic growth in the short run but lead to sustained economic growth and a cleaner environment in the long run, thus achieving sustainable economic growth. However, it is important for the Chinese government to deal with the unintended consequences of the ban and help the affected firms and workers who are negatively affected by the ban. In the long run, the Chinese government should work towards improving its own domestic recycling systems in order to achieve sustainable economic growth.

- (f) With reference to Extract 4, explain the likely value of the price elasticity of supply of recycled waste in the alternate emerging markets such as India, Pakistan or south-east Asia. [3]

Suggested answer:

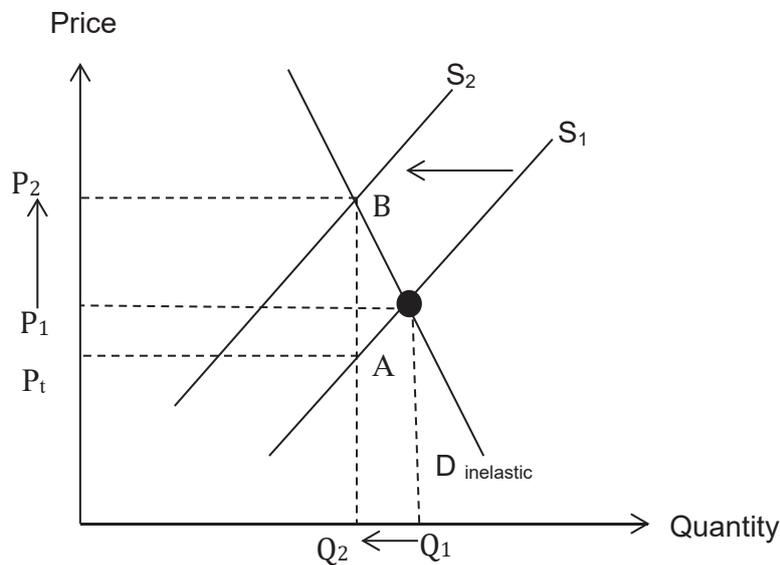
The likely value of price elasticity of supply is likely to be less than 1.

Space capacity is one of the factors that will affect the price elasticity of supply. Supply for recycled waste in the alternate emerging markets such as India, Pakistan or south-east Asia tends to be price inelastic since these countries do not have sufficient processing capacity for recycled waste and it takes time to build these facilities.

- (g) Explain how the price elasticity of demand will determine the amount of tax revenue that EU will raise when it imposes a tax on single-use plastics. [5]

Suggested answer:

The amount of tax revenue collected is equal to the product of tax per unit (AB) and new quantity of single-use plastics used after the tax and this is shown by area ABP<sub>2</sub>P<sub>T</sub>. The amount of the tax revenue collected depends on price elasticity of demand for single-use plastics. If the demand is price inelastic, the quantity demanded will fall less than proportionately and hence tax revenue collected will be larger than if the demand is price elastic as the quantity demanded will fall more than proportionately.



The demand for single use plastics tends to be price inelastic as consumers are already used to the way of life of convenience on the single-use plastics and there are no other better ways to substitute single-use plastics. With the demand being price inelastic, a rise in the price for single-use plastic will lead to a less than proportionate fall in the market equilibrium quantity for single-use plastic. Hence, the tax revenue collected will be large.

- (h) With reference to the data, discuss whether a legislation or public information campaign is a more appropriate policy to achieve greater efficiency in the plastics market in EU. [12]

Suggested answer:

Legislation can be in the form of banning the use of single-use plastics and making all plastic packaging recyclable. (Note: student only need to explain one legislative measure)

With this ban, it will reduce the output of single-use plastics to zero as shown in Figure 1, thus reducing the over-consumption of single-use plastics. This is appropriate if the marginal external cost of single-use plastics is very large and the MSC cuts MSB at Q=0. However, if the MEC is smaller and the marginal social cost is lower at MSC<sub>1</sub>, there will now be a larger welfare loss shown by area B after the ban which is greater than the

original welfare loss as shown by area A before the ban. Thus, a ban is only appropriate if the marginal external cost of plastics is very large.

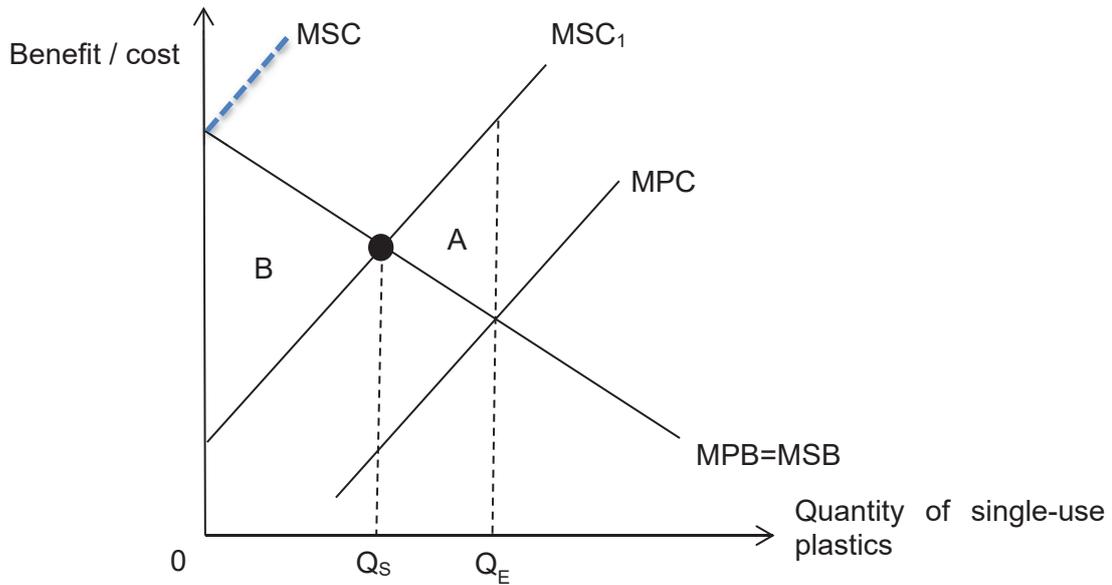
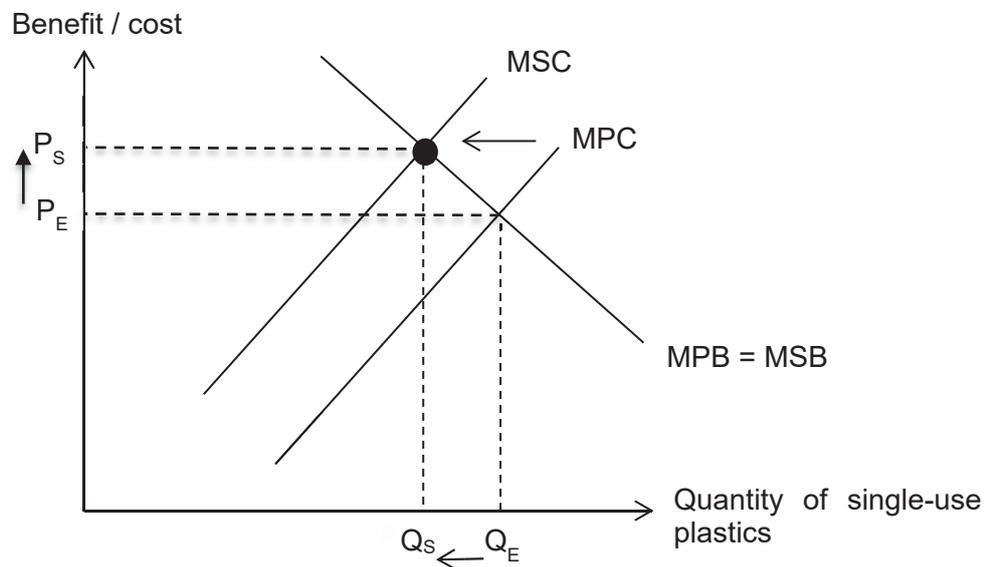
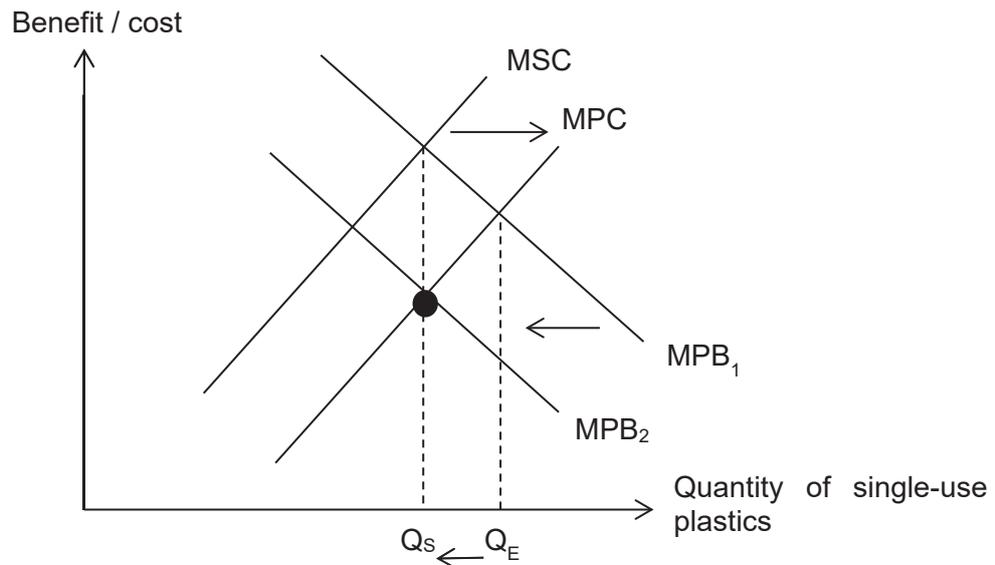


Figure 1

Alternatively, if the government chooses to pass a legislation to make all plastic packing recyclable, this will increase the cost of producing single-use plastics hence shifting the MPC to the left towards MSC, causing the firm to produce fewer single-use plastics from  $Q_E$  to  $Q_S$ . However, this may increase the price of single-use plastics (e.g. Extract 6, “food costs are going to increase”) thus increasing the cost of living of consumers.



Public information campaign aims to reduce the use of single use plastic by persuading consumers not to use single-use plastic and insists on recyclable plastic packaging which are less flashy. This will cause the demand for single-plastic to fall and hence MPB to shift leftwards from  $MPB_1$  to  $MPB_2$  causing quantity of single-use plastics to fall from  $Q_E$  to  $Q_S$  as shown in Figure 1.



In addition, as evident in extract 1, fewer than half of the bottles were collected for recycling which leads to higher external cost due to pollution. Public education can also help to encourage consumers to dispose the recyclable plastic waste correctly. This will reduce the negative externality of consuming single-use plastics and shift the MSC towards MPC. This will reduce the welfare loss due to the over-consumption of plastics.

Use of public information campaign is more appropriate than legislation in the long run.

This is because public information campaign targets at the lack of information which is the root cause for the over-consumption and inappropriate disposal of single-use plastics and hence it is a more appropriate long-term solution to solve the over-consumption of single-use plastics. Legislation does not target at the root cause of the problem as consumers may still continue to demand for recyclable single-use plastics even though they are more expensive because of the habit. Consumers may also continue to dispose these recyclable single-use plastics inappropriately instead of recycling them despite the legislation.

Furthermore, legislation is subject to loopholes and high cost of monitoring. Firms may still continue to use single-use plastics illegally as they are cheaper due to the loopholes in monitoring. Hence, government may need to incur high cost of enforcement which may affect the health of their budget. In the case of EU, many of the governments are facing high national debt problem and there is a need to reduce their government spending to solve the debt problem. Hence, they may not be able to incur higher government expenditure for enforcing the legislation, thus making it less effective.

Legislation is also less appropriate than public information campaign as it may result in higher food prices which affect the cost of living of consumers, particularly the lower income consumers as expenditure on food takes up a large proportion of their income.

Use of public information campaign may be less appropriate than legislation in the short run. This is because public information campaign takes a long time to change the consumers and producers behavior and hence it may not be effective in the short run. Legislation which compels firms and consumers to change behavior immediately may be a more effective policy in the short run although it runs into the risk of causing public backlash as the public has been so used to using single-use plastics and the legislation may result in higher cost of production and hence higher cost of living. Hence, government may be less willing to impose legislation due to the lack of political

receptiveness.

In conclusion, education targets at the root cause of the problem and is an effective long term solution. Legislation on the other hand, targets at the immediate problem of pollution and is a more appropriate short term solution provided that there is effective monitoring.

Given the seriousness of the situation, there is a need to use both policies. With China imposing import ban on recycled waste products and the current high amount of waste being inappropriately dumped in EU, short-term legislation is needed to address the problem quickly coupled with a successful public education to inform the consumers the harm of using single-use plastic products so as make consumers more receptive to the legislation.

However, it is noted that both legislation and public information campaign may be costly to carry out. Hence, the EU governments may also have to consider how they could raise sufficient funds to carry out both of these measures. This could possibly be done through a policy of higher taxation.

## Question 2: Challenges in the United Kingdom (UK) and Singapore economies

- (a) Compare the change in Singapore's real GDP between 2014 and 2017 with that of the UK over the same period. [3]

Suggested answer:

Both Singapore's and UK's real GDP increased between 2014 to 2017.  
Both Singapore's and UK's real GDP increased at a decreasing rate.  
Singapore's real GDP increased at a faster rate than UK's increase in real GDP.

- (b) (i) Describe the change in the UK's budget balance over the period 2014 to 2017. [2]

Suggested answer:

UK's budget balance is in a deficit. The budget deficit decreases.

- (b) (ii) With reference to Table 2, comment on how economic growth could impact the UK's budget balance. [5]

Suggested answer:

According to Table 2, UK experiences slowing economic growth rates from 2014 to 2017 and this provides a signal for the UK government to consider measures in boosting the economy. A possible policy measure is an expansionary fiscal policy that involved raising the level of G and lowering of tax rates but such a move will increase the size of the UK's budget deficit.

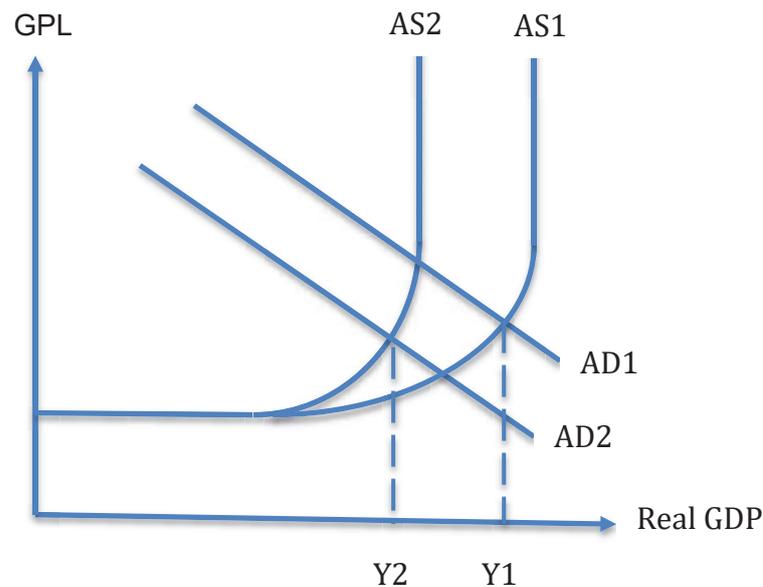
However, despite slowing economic growth rates, UK's budget balance seemed to have improved instead based on data from Table 2. The reason for this could be the UK government adopting austerity measures (reducing G). Positive growth rates therefore could be due to lowered interest rates as mentioned in Ext Paragraph 2 instead of the government pursuing an expansionary fiscal policy.

- (c) Using an AD/AS diagram, explain how the uncertainty from Brexit could impact the UK economy in the short run and long run. [5]

Suggested answer:

According to Extract 7, the uncertainty from Brexit has affected investment spending. Due to the uncertainty, firm's expected returns to investment is reduced. This reduces the profitability of investment thus resulting in the reduction in investment spending (I) and aggregate demand (AD) causing AD to shift from AD1 to AD2 as shown in the figure below. Assuming the economy is near to full employment output level, the fall in AD results in reverse multiplier process causing real national income to fall. This reduces actual growth. A fall in actual growth will also imply firms will reduce their employment of factors of production such as labour, leading to rising unemployment. [2]

In the long run, **productive capacity** of the economy is also adversely affected. With the uncertainty causing fall in I, it means spending on capital goods is reduced. This can reduce **productivity levels** in the long run, reducing LRAS, causing AS1 to shift to AS2 as shown in the figure below. This adversely affects potential growth. Overall, real GDP will fall. However, the impact on GPL will depend on the extent of the fall in AD and LRAS.



- (d) Extract 8 mentions “lack of productivity growth has raised concerns for [6] businesses and policymakers”.

Explain how a lack of productivity growth has raised concerns for businesses and policymakers.

Suggested answer:

Productivity refers to output per hour. With reference to Extract 8, a lack of productivity growth was a concern for firms because it raises unit labour cost when wages increase. This rise in unit labour cost would mean that in order for firms to maintain profit, prices of their goods and services must be raised and if these goods were meant for exports, total revenue of the firms will fall, assuming demand for these goods and services is price elastic. Profit for these exporting firms and businesses therefore decreases. [3]

Also, a lack of productivity growth directly affects the productive capacity of the economy negatively, lowering potential growth of the economy. Falling LRAS is a concern for policymakers as they threaten the attainment of macroeconomic objectives of economic growth and employment in the long run. If AD rise with constraints in AS in the long term, demand-pull inflation may also occur and this reduces real income and SOL. [3]

- (e) Extract 8 mentions that “investment must be raised to step up UK’s economic [2] performance. The UK government has since announced £23billion for infrastructure and research”.

Explain **one** limitation of the above approach.

Suggested answer:

If this rise in G has to be financed by borrowing from the domestic private sector this will lead to increased competition for loanable funds, leading to increase in interest rate which will reduce investment spending due to increase in cost of borrowing. Crowding out effect occurs, reducing effectiveness of raising G to raise real national income.

- (f) After the referendum the Bank of England took steps to boost the economy. In [10] particular, it cut interest rates from 0.5% to 0.25% in August, taking UK rates to a new record low.

Discuss the factors that the UK government would consider before the implementation of an expansionary monetary policy.

Suggested answer:

Before the implementation of an expansionary monetary policy, the UK government has to consider factors such as the intended consequence, constraints, availability of information and whether lowering interest rates target the root cause of the problems the UK economy is facing.

The intended consequence of cutting interest rates is to boost the economy by raising real national income. This is possible as cutting interest rates reduces cost of borrowing, in turn increasing consumption of big ticket item, increasing C and AD. Lower interest rates also reduces returns to savings, decreasing opportunity cost to consume thus increasing C and AD. In terms of investment, lower interest rates decreases cost of borrowing and given the same expected returns to investment, more investment projects are profitable resulting in I and AD to increase. Assuming the level of resource utilization is near full employment, the rise in AD results in the multiplier process which in turn increases real national income, boosting the economy.

While cutting interest rates can possibly bring about the rise in real national income, there are constraints to the use of this tool and one of it is the confidence level in the economy. For cutting interest rates to be effective in raising C and I, households and firms must be confident of their expected incomes for them to be willing to raise C and I. As mentioned in Extract 7, there is much uncertainty to Brexit and with UK having a budget deficit as well, firms may pessimistic and expect returns to investment to be lower, thus even with a lowering of cost of borrowing, investment projects may not be more profitable, limiting the increase in I. Consequently, the rise in AD and real national income may not be significant.

Another factor the government has to consider before implementing an expansionary monetary policy is the availability and accuracy of information on how much interest rates to cut such that the economy can be successfully boosted. If accurate information is not available, cutting interest rates by too little may not lead to sufficient rise in C and I, especially when there are uncertainties in the UK economy. If the cut in interest rates is too significant, it could lead to significant rise in C and I which raise AD too much that it becomes inflationary, compromising on price stability.

With reference to Extract 7, the root causes of the economic gloom in the UK economy seemed to stem from the Brexit referendum and even perhaps her dismal budget position. Hence, when considering whether to lower interest rates in boosting the economy, the UK government must identify the root causes of her economic issues before adopting the appropriate policies. A better approach might be to complement the lowering of rates with some **austerity** measures to improve the budget balance and confidence so that the **lowering of interest rates** is more effective in raising consumption and investment.

Given the **economic situation** that UK is in, constraints such as pessimistic outlook can be very significant, which will greatly reduce the effectiveness of an expansionary monetary policy in achieving its intended consequence of boosting the economy.

Thus if implemented, it has to be complemented with another policy such as a prudent expansionary fiscal policy on infrastructure and research to boost growth in both the short run and long run/ austerity measures to ensure that the UK economy is able to rebound.

- (g) The Singapore Government has relied on major policies such as “SMEs Go Digital” and “Adapt and Grow” to prepare Singapore for the future. [12]

In view of the challenges facing the Singapore economy, discuss whether such policies are the most appropriate in raising the standard of living in Singapore.

Suggested answer:

The challenges facing the Singapore economy include the slowdown in productivity and the rise in global uncertainties which negatively affects Singapore’s export revenue (X).

According to Extract 10, “SMEs Go Digital” is a policy aimed at raising the productivity levels of small and medium-sized enterprises (SMEs) such as in the area of retail and logistics. SMEs are encouraged to digitalise their processes such that more output can be produced per unit of time. When firms engage in such process improvement, firms’ productivity levels increase, increasing the Singapore economy’s productive capacity. A rise in productivity can also unit COP, increase SRAS and economic growth, leading to higher material SOL.

For “Adapt and Grow”, it is a policy aimed at deepening skills of workers in Singapore by getting them trained such that they are able to work in the sunrise industries. This reduces structural unemployment and at the same time increasing the quality of labour, allowing output per man hour to increase in turn raising the economy’s full employment output level. This increases the Singapore economy’s productive capacity.

Thus LRAS shifts rightwards, allowing Singapore economy to achieve potential growth. When real GDP increases in the long run, this means that there will be more output of goods and services available for consumption resulting in an increase in material SOL. With a higher real GDP in the long run, the government could also see increase in tax revenue collected in terms of income tax, corporate tax as well as from GST. With higher tax revenues, the government has the means to provide more merit and public goods. This increases the variety and quality of goods and services enjoyed in the country, increasing material SOL for citizens.

According to Extract 10, SMEs are not embracing all the tools available to raise productivity. This could be because process digitalisation can be a very costly endeavor and in the short run, profits for firms fall due to rise in cost of production and thus firms are unwilling to go onboard despite the government’s efforts on “SMEs Go Digital”. Thus the rise in LRAS and consequently on SOL can be limited.

In addition, with “Adapt and Grow” having up to 80% of workers’ wages and training fees paid for by the government means that it involves huge government expenditure. Opportunity cost is incurred as less funds can be channeled to other sectors such as healthcare, negatively affecting SOL.

“SMEs Go Digital” and “Adapt and Grow” are able to tackle directly the slowdown in productivity. However, to tackle the rise in global uncertainties and the prospect of less trade with Europe and US, what Singapore government can do is to adopt a **zero appreciation of the Singapore dollar**, which brings about a depreciating effect. A depreciating effect from a neutral exchange rate policy will make Singapore’s exports more price competitive and assuming PED for exports is more than one, a fall in price of exports will lead to a more than proportionate increase in quantity demanded for exports, increasing Singapore’s export revenue. This helps to stimulate growth as AD and real GDP rises, increasing the material SOL of the population and income rises.

Alternatively, what can be done to tackle the rise in global uncertainties and the prospect of less trade with Europe and US is to sign more Free Trade Agreements

(FTAs) to diversify export destinations such that even if exports to Europe and US were to fall, Singapore's  $X$  is cushioned by having exports to other countries.

"SMEs Go Digital" and "Adapt and Grow" are able to tackle directly the slowdown in productivity. When productivity levels are raised successfully, per unit cost of production falls and this can in turn also raise Singapore's export competitiveness, mitigating the negative effects of global uncertainties on Singapore's  $X$  as well. Thus "SMEs Go Digital" and "Adapt and Grow" are appropriate in addressing the two key challenges facing the Singapore economy.

To enhance the effectiveness, these two policies have to be complemented with gradual and modest appreciation of exchange rate and FTAs such that our exports can remain competitive and reduce the effects of a fall in  $X$  on Singapore's economy, directly addressing the challenge on rising global uncertainties.



Class Adm No

Candidate Name: \_\_\_\_\_

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## 2019 End-of-Year Exams Pre-university 2

**H1 ECONOMICS**

**8823/01**

Paper 1

**16 September 2019**

**3 hours**

Additional Materials: Answer Paper

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### **READ THESE INSTRUCTIONS FIRST**

Write your name and class on all the work you hand in.  
Write in dark blue or black pen on both sides of the paper.  
You may use a soft pencil for any diagrams or graphs.  
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

At the end of the examination, fasten your work to Questions 1 and 2 **separately**.  
The number of marks is given in brackets [ ] at the end of each question or part question.

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This question paper consists of **8** printed pages.

Answer all questions.

### Question 1: A Meaty Muddle

Table 1: Global meat consumption (1961 and 2013)

	1961	2013
Meat consumption per capita (kg)	23.08	43.22
Population (billions)	3.07	7.21

Source: Various, 2017 and 2019

#### Extract 1: Rising global meat consumption 'will devastate environment'

Rising global meat consumption is likely to have a devastating environmental impact, scientists have warned.

A new major analysis suggests meat consumption is set to climb steeply as the world population increases along with average individual income, and could play a significant role in increasing carbon emissions and reducing biodiversity.

"What's happening is a big concern and if meat consumption goes up further it's going to be massively more so," said Prof Tim Key, an epidemiologist at the University of Oxford and co-author of the review. "On a broad level you can say that eating substantial amounts of meat is bad for the environment."

The review, published in the journal, *Science*, found that high levels of meat consumption also have negative health consequences, leading to an increased risk of colorectal cancer and possibly of cardiovascular disease.

The average amount of meat consumed per person globally has nearly doubled in the past 50 years, from around 23kg in 1961 to 43kg in 2014. The increase in average individual meat consumption means total meat production has been growing at a much faster than the rate of population growth, increasing four or fivefold since 1961.

There are recent indications that some countries, including the UK, may have reached "peak meat". The UK's 2017 National Food Survey found consumption of raw beef, lamb and pork had fallen by 4.2% and that of meat products including sausages, bacon and poultry by nearly 7% since 2012.

However, middle-income countries, particularly China and others in East Asia, are still seeing a rise. Taken together, there is a projected increase in global meat consumption of 76% by mid-century, including a doubling in the consumption of poultry, a 69% increase in beef and a 42% increase in pork.

"It is difficult to envisage how the world could supply a population of 10 billion or more people with the quantity of meat currently consumed in most high-income countries without substantial negative effects on the environment," the *Science* paper concludes.

The paper outlines how, in broad terms, meat production – particularly livestock – is linked to far higher carbon emissions than vegetables, fruits and grains. Livestock production currently accounts for 15% of all anthropogenic emissions (carbon dioxide, methane and nitrous oxide).

Livestock farming is also a major contributor to biodiversity loss, as forests and wild countryside are given over to agricultural land to grow animal feed. And the draining of rivers

and lakes to irrigate land used to grow corn and other grains used as animal feed is already having a substantial impact on water resources, the analysis found.

The paper also flags the potential negative health consequences of adopting a meat-heavy diet, although these are moderate compared to other ills like smoking. Since 2015, processed meat has been ranked by the World Health Organization in a group of 120 proven carcinogens alongside alcohol, asbestos and tobacco. According to Cancer Research UK, if no one ate processed or red meat in Britain, there would be 8,800 fewer cases of cancer a year.

Source: The Guardian, 2018

### **Extract 2: \$68m fund to turn labs into food factories of the future**

A total of US\$50 million (S\$68 million) is up for grabs here for those who can produce proteins of the future, such as lab-grown meat<sup>1</sup>.

In the coming years, food production will struggle to keep up with more hungry mouths, who will need about 60 per cent more food by 2050. And already, global warming is threatening yields from the land and sea.

To deal with the impending food shortage, Singapore is concentrating efforts on increasing the nation's food output, with the ambitious goal of producing 30 per cent of what people need to eat by 2030, from less than a tenth now. Lab-grown meat will be a key industry to develop.

Additionally, lab-grown meat has a lower carbon footprint than conventional meat and do not involve killing animals. If successful, lab-grown meat will also minimise climate change.

To support this effort, the Government has pledged funding of up to \$144 million for food-related research and development programmes, as well as \$80 million into cell manufacturing, which will be a cornerstone of lab-grown meat. It is also opening up an experimental farming plot in Sungei Kadut to test out ideas, and ramping up related courses.

<sup>1</sup>Lab-grown meat refers to meat that is grown from cells cultured in laboratories. This is in contrast to conventional meat where a live animal has to be reared before it is killed to produce the meat.

Source: The Straits Times, 2019

### **Extract 3: Add more plants, and less meat to your meals. Here's why**

In recent years, more people have been adding more plants to their plate in place of meat. The growing awareness of the role of animal agriculture (using animals for meat, eggs and dairy) as a leading driver of global warming is part of the reason.

However, as important as environment and animal welfare issues are, health may be the primary motivation driving this shift towards plant-based foods.

Research demonstrates how eating plants can boost our health by raising antioxidant levels, lowering weight and cholesterol, and reducing risk of chronic diseases, such as diabetes, heart disease, certain cancers and dementia. And campaigns such as the global "Meatless Monday" movement have seized the opportunity to encourage consumers to eat less meat through publicising such information. They encourage consumers to reduce meat consumption by not eating meat on Mondays.

Source: Various, 2018 and 2019

**Questions**

- (a) (i) Calculate the total global meat consumption in 1961 and in 2013, and describe how it has changed. [3]
- (ii) Compare the change in global meat consumption per capita and the change in the global population. Hence, infer which contributed more to the change in total global meat consumption described in (a)(i). [3]
- (iii) From Extract 1, identify and explain the reasons for the change in total global meat consumption. Illustrate your answer with an appropriate diagram. [4]
- (b) Using Extract 1, explain the concepts of market failure due to negative externalities and imperfect information in the context of the meat market. [8]
- (c) Assess how well each of the following addresses the failure in the meat market.
- (i) The Singapore government pledging “\$80 million into cell manufacturing, which will be a cornerstone of lab-grown meat” (Extract 2). [8]
- (ii) “Campaigns such as the global “Meatless Monday” movement” (Extract 3). [8]
- (d) In view of the world having “more hungry mouths” and that “global warming is threatening yields” (Extract 2), discuss how the conventional meat industry would be affected by the development of lab-based meat and campaigns like the “Meatless Monday” movement. [11]

**[Total: 45 marks]**

## Question 2: Currency Manipulation and the Economy

### Extract 4: What is currency manipulation?

Currency manipulation occurs when a country manipulates the rate of exchange between their currency and another (for example, the US dollar) to gain a competitive advantage. As set out in the Treasury report, one of the US administration's aims is to combat "unfair" currency practices that "facilitate competitive advantage, such as unwarranted intervention in currency markets".

The Monetary Authority of Singapore (MAS) said that it "does not manipulate its currency for export advantage". Singapore conducts monetary policy not by targeting interest rates, but by managing the Singapore dollar nominal effective exchange rate (S\$NEER) within a policy band, it said. As part of this, MAS may intervene in the foreign exchange market to prevent excessive fluctuations in the Singapore dollar exchange rate. "Intervention in the foreign exchange market is expected to manage the SGD within the S\$NEER band," said Ms Ling. But MAS does not and cannot use the exchange rate to gain an export advantage or achieve a current account surplus, the central bank said. This is because a deliberate weakening of the Singapore dollar would cause inflation to spike and compromise MAS' price stability objective, it added.

Adapted from: Channel NewsAsia, 29 May 2019

### Extract 5: Are trade wars spiralling into currency wars?

The recent weakening of the Chinese Renminbi (RMB) to its lowest level in over fifteen months against the US dollar has fuelled speculations that China is intentionally devaluing the RMB to counter the impact of rising US tariffs. An RMB depreciation may likely offset some of the tariff impacts but there are worries that it could create a "domino" effect with other countries following suit. Indeed, President Trump tweeted about his belief that currency manipulation was pervasive across the rest of the world, taking away the competitive edge of the US. However, it is far from clear as to whether the RMB depreciation can be deemed deliberate. The weakening could well be in part due to a hike in US interest rates, which increased demand for its currency.

If a series of depreciations were to occur in the region, it could likely destabilise countries in Asia both due to imported inflation and the relatively high levels of US dollar denominated corporate debt accumulated by many Asian firms. The worst scenario being that if a currency war turns into a currency freefall in Asia, interest rates will need to rise to stabilise the currencies, leading to significant economic slowdown.

Adapted from: Lee Kuan Yew School of Public Policy, 21 August 2018

**Table 2: Macroeconomic Indicators, 2018**

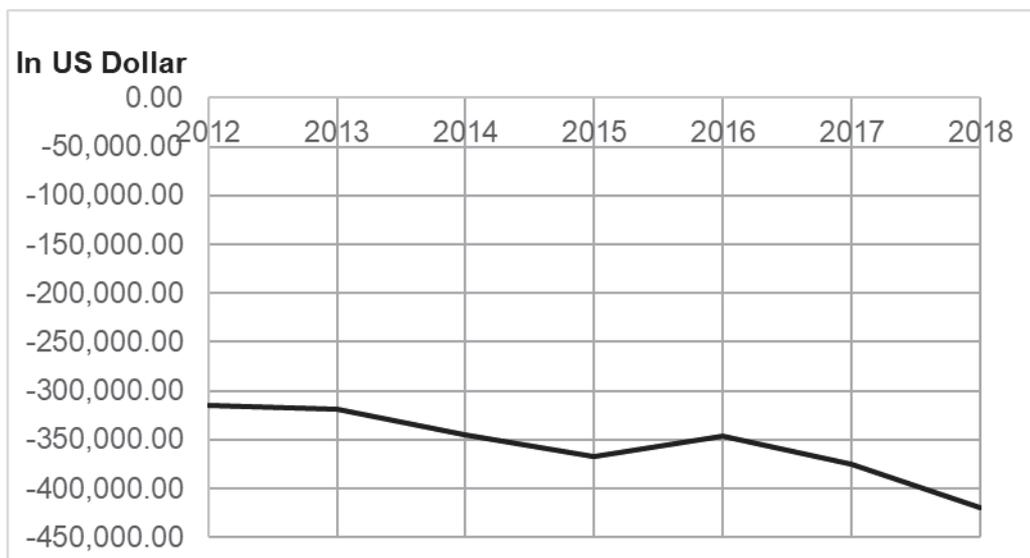
	<b>China</b>	<b>USA</b>	<b>Singapore</b>
<b>Real GDP growth (annual %)</b>	6.6	2.9	3.1
<b>Inflation (annual %)</b>	2.9	2.3	1.9
<b>Population Growth (annual %)</b>	0.5	0.6	0.5
<b>Overall Unemployment (annual average %)</b>	3.9	3.9	2.1

Source: World Bank, Ministry of Manpower, Singapore and Trading Economics. Accessed: July 2019

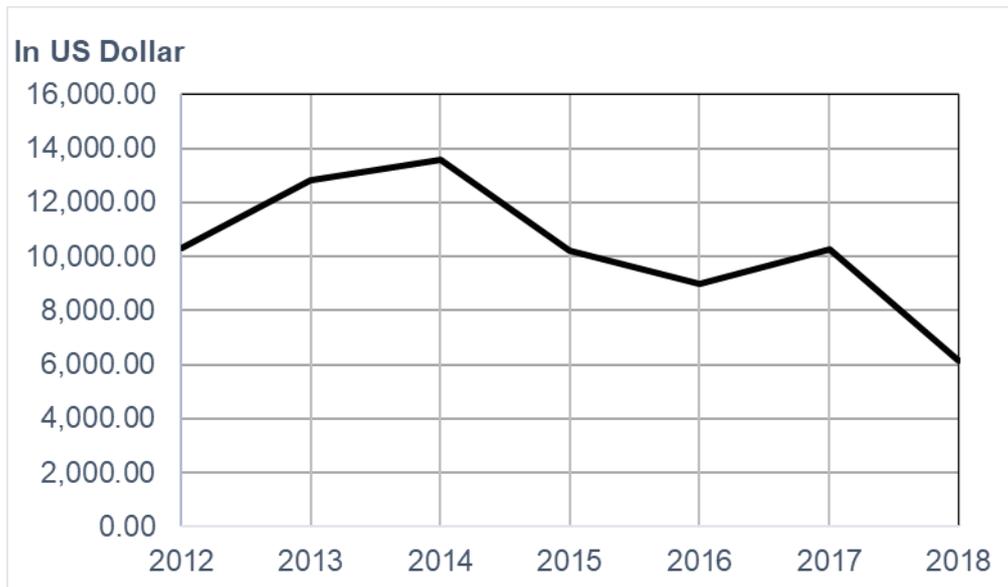
**Table 3: Human Development Index**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>China</b>	0.738	0.743	0.748	0.752
<b>USA</b>	0.918	0.920	0.922	0.924
<b>Singapore</b>	0.928	0.929	0.930	0.932

Source: United Nations Development Programme, Human Development Report. Accessed: August 2019

**Figure 1: United States' Trade Balance in Goods with China**

Source: United States Census Bureau. Accessed: July 2019

**Figure 2: United States' Trade Balance in Goods with Singapore**

Source: United States Census Bureau. Accessed: July, 2019

#### **Extract 6: Federal Reserve raises interest rates again**

US interest rates remain relatively low, reflecting the Federal Reserve's decision to lower them dramatically during the financial crisis in an effort to encourage borrowing and boost economic activity. But Federal Reserve (Fed) Chair Jerome Powell and other economists say today's economy is strong enough that such stimulus is no longer necessary. Mr. Powell said Wednesday's rate rise reflected the Fed's confidence in the US economy. But he acknowledged that the bank is hearing a "rising chorus of concerns" from businesses about the risk from new US trade tariffs, which have disrupted supply chains and led to retaliation against US exports.

Higher interest rates make borrowing more expensive, slowing economic activity and curbing price inflation. There have already been slowdowns some sectors in the US, such as home and car sales, where higher interest rates have led some price-conscious consumers to pull back. Analysts worry that raising rates too quickly could tip the economy into recession.

Adapted from: BBC News, 26 September 2018

#### **Extract 7: Monetary Authority of Singapore, Macroeconomic Review, April 2019**

The growth momentum of the global economy has moderated by more than expected at the turn of the year alongside sluggish trade. As a result, the Singapore economy has slowed, and is likely to expand at a modest pace in the coming quarters. Over the last six months, the contribution of the manufacturing sector to GDP growth has waned, reflecting the maturing of the global electronics cycle and the economic slowdown in China. Meanwhile, activity in the services sector stayed firm, supported mainly by financial and business services, as well as information and communication services. The construction sector has also recovered from a protracted period of weakness.

In 2019, external sources of inflation are likely to be benign, as global oil prices are expected to come in lower for the year as a whole than in 2018, while food prices should only pick up slightly on average. On the domestic front, labour market conditions remain firm and will support moderate wage increases, such that unit labour costs should continue to rise. However, an acceleration in inflationary pressures is unlikely against the backdrop of slower GDP growth, uncertainties in the global economy, as well as the continuing restraining effects of MAS' monetary policy tightening in 2018.

Adapted from: Monetary Authority of Singapore, April 2019

### Questions

- (a) Identify which country has the highest nominal GDP growth in 2018 and support your answer with a calculation. **[2]**
- (b) (i) Compare the trend of United States Trade Balance in goods with China with that of Singapore. **[2]**
- (ii) With reference to Extract 5 and Figure 1, explain whether the data shows that China is manipulating its currency. **[4]**
- (c) Explain the positive impacts of Federal Reserve's decision to raise interest rates on the US economy and comment on its appropriateness. **[7]**
- (d) (i) Identify which country has the largest change in real GDP per capita in 2018 and support your answer with a calculation. **[2]**
- (ii) Using Tables 2 and 3, assess whether China, USA or Singapore has the greatest improvement in standard of living. **[8]**
- (e) (i) Explain why "Singapore conducts monetary policy not by targeting interest rates, but by managing the Singapore dollar nominal effective exchange rate (S\$NEER)" (Extract 4). **[8]**
- (ii) In light of the current economic outlook, assess whether Singapore should change its policy stance of "monetary policy tightening" (Extract 7). **[12]**

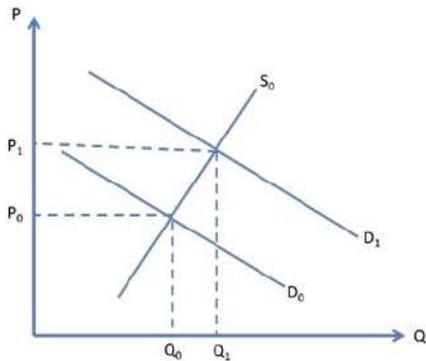
**[Total: 45 marks]**

**- End of Paper -**



Question 1

(a)	(i)	<p><b>Calculate the total global meat consumption in 1961 and in 2013, and describe how it has changed.</b></p>	[3]
		<p>Total global meat consumption = Meat consumption per capita x Global Population            For 1961: 23.08kg x 3.07 billion = 70.86 billion kg [1]            For 2013: 43.22kg x 7.21 billion = 311.62 billion kg [1]</p> <p>Overall, total global meat consumption has increased. [1]</p> <p><i>1m for accurate calculation of total global meat consumption in 1961            1m for accurate calculation of total global meat consumption in 2013            1m for identifying the increase</i></p> <p><i>Note: For the first 2m, if the student shows the correct formula but makes a calculation error, award 1m</i></p>	
	(ii)	<p><b>Compare the change in global meat consumption per capita and the change in the global population. Hence, infer which contributed more to the change in total global meat consumption described in (a)(i).</b></p>	[3]
		<p>Both global meat consumption per capita and global population increased. [1]            However, the increase in global population was to a greater extent. [1]            Hence, the increase in the global population contributed more to the increase in the total global meat production. [1]</p> <p><i>1m for comparison of general trend            1m for comparison of extent of change            1m for accurate inference of which contributed more to the increase in the total meat production</i></p> <p><i>Note: Allow for error carried forward</i></p>	
	(iii)	<p><b>From Extract 1, identify and explain the reasons for the change in total global meat consumption. Illustrate your answer with an appropriate diagram.</b></p>	[4]
		<p>The two reasons are the increase in the global population [1], and the increase in average incomes [1] (Extract 1: “suggests meat consumption is set to climb steeply as the world population increases along with average individual income”).</p> <p>Both the increase in global population and the increase in average incomes would cause the demand for meat to increase [1].</p>	



As can be seen in the diagram above, the increase in demand caused the consumption of meat to increase from  $Q_0$  to  $Q_1$  units. [1]

1m for each reason identified from Extract 1 that is linked to an increase in demand (up to 2m)

1m for explanation using D&S analysis (i.e., increase in  $D$  causing increase in  $Q$ )

1m for diagram with reference to the diagram

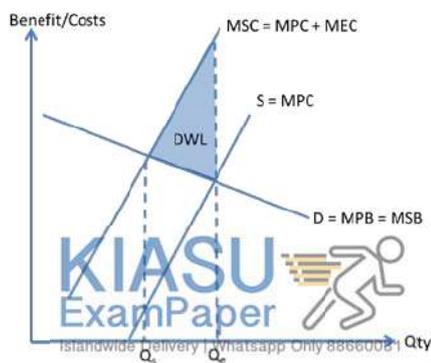
**(b) Using Extract 1, explain the concepts of market failure due to negative externalities and imperfect information in the context of the meat market. [8]**

The market for meat is failing due to both negative externalities and imperfect information.

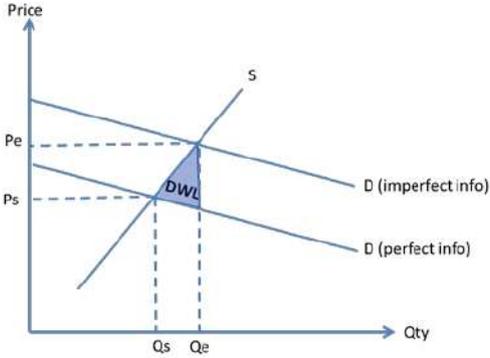
Explain how market fails due to negative externalities

Meat production generates negative externalities in terms of the damage to the environment such as the loss of biodiversity due to the clearing of land for livestock farming, and the contribution to global warming (Extract 1).

Such negative externalities cause a divergence between marginal social cost (MSC) and marginal private cost (MPC) as  $MSC = MPC + \text{marginal external cost (MEC)}$ .



In the diagram above, the market equilibrium would be at  $Q_e$  where  $MPB = MPC$  as consumers and producers of meat are self-interested and do not consider external costs. However, the socially optimal output is at  $Q_s$  where  $MSB = MSC$ . Since  $Q_e$  exceeds  $Q_s$ , there is overproduction of meat. This

	<p>causes a deadweight loss of the shaded area as MSC exceeds MSB for the output between <math>Q_s</math> and <math>Q_e</math>.</p> <p><u>Explain how market fails due to imperfect information</u></p> <p>Moreover, the market may fail due to imperfect information where consumers underestimate the cost of consuming meat to themselves, such as the health cost in terms of increased risk of colorectal cancer and possibly of cardiovascular disease (Extract 1).</p> <p>This causes the demand with imperfect information to be higher than the demand with perfect information, as seen in the diagram below.</p>  <p>The market equilibrium would be at <math>Q_e</math> where <math>D_{\text{imperfect}} = S</math>. However, the socially optimal output is at <math>Q_s</math> where <math>D_{\text{perfect}} = S</math>. Since <math>Q_e</math> exceeds <math>Q_s</math>, there is overconsumption of meat. This causes a deadweight loss of the shaded area.</p> <p><i>4m for each source of market failure explained</i></p> <ul style="list-style-type: none"> <li>• 1m for explaining the source of market failure in the context of Extract 1</li> <li>• 1m for explaining <math>Q_e</math> (provision of the condition)</li> <li>• 1m for explaining <math>Q_s</math> (provision of the condition)</li> <li>• 1m for overproduction/overconsumption and hence DWL</li> </ul>	
(c)	<p><b>Assess how well each of the following addresses the failure in the meat market.</b></p>	
(i)	<p><b>The Singapore government pledging “\$80 million into cell manufacturing, which will be a cornerstone of lab-grown meat” (Extract 2).</b></p>	[8]
	<p><b>Question Analysis</b></p> <p>Command word = “Assess” → Need two sides and an evaluative conclusion</p> <p>Content = “how well the Singapore government pledging “\$80 million into cell manufacturing, which will be a cornerstone of lab-grown meat” addresses the failure in the meat market” → Two sides are:</p> <ul style="list-style-type: none"> <li>• Singapore government pledging “\$80 million into cell manufacturing...” addresses the failure in the meat market</li> <li>• Singapore government pledging “\$80 million into cell manufacturing...”</li> </ul>	

does not address the failure in the meat market (i.e., limitations of the policy)  
Context = Singapore, meat market

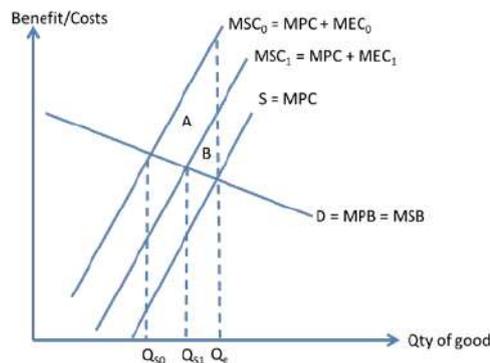
Introduction

The Singapore government pledging “\$80 million into cell manufacturing...” is an example of an R&D grant. This R&D grant could help solve the market failure due to negative externalities in the meat industry.

Thesis: Singapore government pledging “\$80 million into cell manufacturing...” addresses the failure in the meat market

The development of cell manufacturing would allow meat to be produced without having to raise livestock. This would mean that the production of meat would produce less negative externalities as there would not be any carbon emissions from livestock, and there would be no loss of biodiversity due to not having to clear land to raise livestock.

The reduction in negative externalities would mean that MEC decreases and hence MSC would shift towards MPC. As such, the gap between  $Q_s$  and  $Q_e$  would be reduced and so would the deadweight loss. This is seen in the diagram below where the shift of MSC from  $MSC_0$  to  $MSC_1$  eventually caused the DWL to fall from area A+B to just area B.



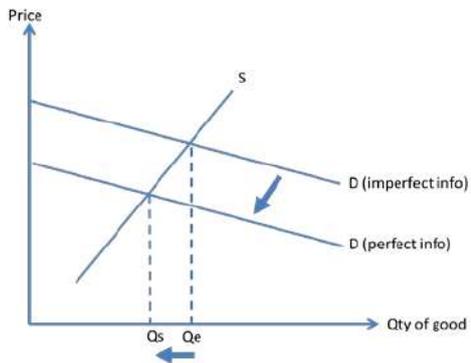
Anti-thesis: Singapore government pledging “\$80 million into cell manufacturing...” does not address the failure in the meat market (i.e., limitations of the policy)

However, there may be limitations to this policy. First, the development of lab-based meat is still in its infancy and the R&D efforts may not be successful (Extract 2: “If successful, ...”). Additionally, even eventually successful, the process may take a long time and is unable to address the pressing problem of climate change.

Conclusion

In conclusion, how well the policy of giving R&D grants addresses the market failure would depend on the time period in question. In the short run, it is unlikely that there would be any discernible effect. However, in the long run, assuming it is successful, it would address the market failure quite well since it allows for the negative externalities to be avoided without consumers having to

	make lifestyle changes.													
	<table border="1"> <thead> <tr> <th>Level</th> <th>Descriptor</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>Explains both thesis and anti-thesis (balance) and make use of appropriate economic analysis (depth). The context of the meat market is accounted for (i.e., not a purely theoretical answer) (context).  Well-explained thesis only – Max 4 No context at all – Max 4</td> <td>4-6</td> </tr> <tr> <td>1</td> <td>Answer lacks depth.</td> <td>1-3</td> </tr> <tr> <td>E</td> <td>Makes a judgement that answers the question, and justifies the judgement.</td> <td>1-2</td> </tr> </tbody> </table>	Level	Descriptor	Marks	2	Explains both thesis and anti-thesis (balance) and make use of appropriate economic analysis (depth). The context of the meat market is accounted for (i.e., not a purely theoretical answer) (context).  Well-explained thesis only – Max 4 No context at all – Max 4	4-6	1	Answer lacks depth.	1-3	E	Makes a judgement that answers the question, and justifies the judgement.	1-2	
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E	Makes a judgement that answers the question, and justifies the judgement.	1-2												
(ii)	<b>“Campaigns such as the global “Meatless Monday” movement” (Extract 3).</b>	<b>[8]</b>												
	<p>Question Analysis</p> <p>Command word = “Assess” → Need two sides and an evaluative conclusion  Content = “how well campaigns such as the global “Meatless Monday” movement addresses the failure in the meat market” → Two sides are:</p> <ul style="list-style-type: none"> <li>• campaigns such as the global “Meatless Monday” movement addresses the failure in the meat market</li> <li>• campaigns such as the global “Meatless Monday” movement does not addresses the failure in the meat market (i.e., limitations of the policy)</li> </ul> <p>Context = meat market</p> <p><u>Introduction</u>  The “Meatless Monday” movement is an example of education and campaigns. It could help solve the market failure due to imperfect information in the meat industry.</p> <p><u>Thesis: Campaigns such as the global “Meatless Monday” movement addresses the failure in the meat market</u>  Such campaigns help to inform consumers about the negative health effects of consuming too much meat and the positive health effects of replacing some of the meat with plants instead. This corrects the imperfect information of consumers.</p> <p>The correction of imperfect information would means that consumers would now demand less meat and demand would fall from Dimperfect to Dperfect in the diagram below. Hence, <math>Q_e</math> would fall to <math>Q_s</math>, correcting the market failure by removing the DWL.</p>													



Anti-thesis: Campaigns such as the global “Meatless Monday” movement does not addresses the failure in the meat market (i.e., limitations of the policy)

However, there may be limitations to this policy. First, the extent of the fall in demand may be limited if consumers find it difficult to change their eating habits. This is especially so in developing/middle income countries where eating meat is also a status symbol. Also, even if consumers mindsets can be changed eventually, it would take a long time and cannot address the pressing issue.

Conclusion

In conclusion, how well the policy of campaigns addresses the market failure would depend on the country in question. In countries such as UK where meat is no longer a status symbol, such a campaign is more likely to be successful (Extract 1: UK has reached peak meat). However, in countries such as China where in rural areas, the ability to afford meat is still a status symbol, it is less likely to be successful.

Level	Descriptor	Marks
2	Explains both thesis and anti-thesis (balance) and make use of appropriate economic analysis (depth). The context of the meat market is accounted for (i.e., not a purely theoretical answer) (context).  Well-explained thesis only – Max 4 No context at all – Max 4	4-6
1	Answer lacks depth.	1-3
E	Makes a judgement that answers the question, and justifies the judgement.	1-2

(d)

**In view of the world having “more hungry mouths” and that “global warming is threatening yields” (Extract 2), discuss how the conventional meat industry would be affected by the development of lab-based meat and campaigns like the “Meatless Monday” movement.**

[11]

Question Analysis

Command word = “Discuss” → Since this is a question about effect on

meat industry, the “discuss” means that elasticities must be applied  
 Content = “how the conventional meat industry would be affected” → Need to do analysis of P & Q in the market  
 Context = conventional meat market

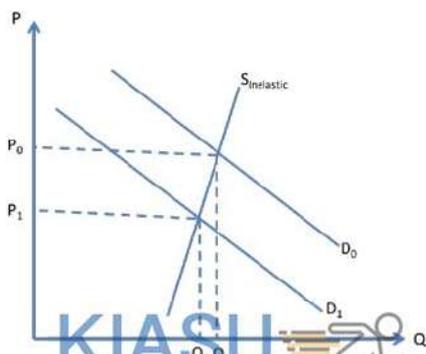
Introduction: Background of “more hungry mouths” and that “global warming is threatening yields” (Extract 2)

With “more hungry mouths” due to the increase in global population, the demand for conventional meat would increase. At the same time, “global warming threatening yields” would cause a reduction in the supply of grains that would then drive up the price of grains. Since conventional meat production requires the livestock to be fed with grains, the cost of production of meat would increase, causing the supply of conventional meat to fall. Combining the effects, this would cause an increase in price of conventional meat while the quantity traded is indeterminate.

Body: Effect of lab-based meat and “meatless Monday” campaign

Lab-based meat is a substitute for conventional meat. So, the development of it would reduce the demand for conventional meat as some consumers would switch away to consuming lab-based meat instead of conventional meat. The “meatless Monday” campaign would further add to the fall in demand by changing consumers’ tastes and preferences away from conventional meat. This reduction in demand would cause a surplus of conventional meat and hence a reduction in price and quantity traded of conventional meat.

Additionally, since conventional meat is perishable and cannot be stored for too long, the supply of meat is price inelastic. As such, the reduction in price of conventional meat would only cause a less than proportionate fall in the quantity supplied of it. This means that the reduction in price would be to a large extent while the reduction in quantity traded would be to a small extent. This is illustrated in the diagram below.



This fall in price would help offset some of the increase in price of conventional meat caused by the growing population and fall in yields due to climate change. However, since the reduction in quantity is only to a small extent, the quantity traded would remain indeterminate.

Conclusion

Overall, whether the lab-based meat and campaign will only offset or reverse

the increase in price of conventional meat would depend on time period. In the short run, the development of lab-based meat and the “meatless Monday” campaigns are unlikely to have much effect as both events will require a long time before a significant effect on the demand of conventional meat can be observed. Thus, the price of conventional meat is likely to continue to increase. In the long run, however, as lab-based meat becomes a viable substitute for conventional meat and the “meatless Monday” campaign gains traction, the price of conventional meat would start falling instead.

Level	Descriptor	Marks
3	Explains how “more hungry mouths” and “global warming threatening yields” would affect the conventional food market using demand and supply analysis, and explains the effects of the development of lab-based meat and campaigns like the “Meatless Monday” movement using demand and supply analysis and an appropriate elasticity concept.  Max 6m if demand and supply analysis is applied both in setting the context and analysing the effects of lab-based meat and “meatless Mondays” campaign but elasticity concepts are not applied at all.	6-8
2	Only explains the effects of the development of lab-based meat and campaigns like the “Meatless Monday” movement using demand and supply analysis and an appropriate elasticity concept. Context of “more hungry mouths” and “global warming threatening yields” not analysed (only described/not mentioned at all)	3-5
1	Only explains the effects of the development of lab-based meat and campaigns like the “Meatless Monday” movement using demand and supply analysis.	1-2
E	Makes a judgement that answers the question, and justifies the judgement.	1-3

Question 2

<b>(a)</b>	<b>(i)</b>	Identify which country has the highest nominal GDP growth in 2018 and support your answer with a calculation.	<b>[2]</b>
		<p>China [1].</p> <p>Since Nominal GDP = Real GDP + inflation, 6.6 + 2.9 is the highest amongst the three countries. [1]</p> <p><i>Identify [1 mark]</i> <i>Calculation [1 mark]</i></p>	
<b>(b)</b>	<b>(i)</b>	Compare the trend of United States Trade Balance in goods with China with that of Singapore.	<b>[2]</b>
		<p>Difference: US has a trade deficit with China but a trade surplus with Singapore [1]</p> <p>Similarity: Trade deficit with China and trade surplus with Singapore is worsening [1]</p>	
	<b>(ii)</b>	With reference to Extract 5 and Figure 1, explain whether the data shows that China is manipulating its currency.	<b>[4]</b>
		<p>Currency manipulation occurs when a country manipulates its exchange rate, specifically, devaluing its exchange rate.</p> <p><u>Thesis:</u> China is manipulating its currency by devaluing the RMB as US's trade deficit with China is worsening as seen in Figure 1. When China devalues its currency, prices of imported goods and services are now more expensive from US. Hence, consumers will switch to buying from domestic producers instead, which reduces the demand for US's exports. On the other hand, prices of exports in terms of foreign currency are now cheaper. This results in US buying more of China's exports. As such, US's import expenditure from China increases and US's export revenue to China falls. This results in the worsening trade deficit.</p> <p><u>Anti-thesis:</u> There is another reason to account for the fall in external value of Chinese RMB. As stated in Extract 5, US increased its interest rates, led to an increase in demand for US dollar, resulting in USD appreciating against RMB, which means that RMB has depreciated against USD.</p> <p><i>Explanation, with reference to data, how China is manipulating currency [2]</i> <i>Explanation, with reference to data, why US's currency is appreciating against China is due to other reasons [2]</i></p>	

(c)	Explain the positive impacts of Federal Reserve's decision to raise interest rates on the US economy and comment on its appropriateness.	<b>[7]</b>
	<p><u>Explain how contractionary monetary policy (interest rates based) works and how it meets macroeconomic aims of US.</u></p> <p>As interest rate is both the cost of borrowing and the return on savings, a rise in interest rates leads to consumers borrowing less money to spend and saving more instead. This decreases C [1]. At the same time, with the higher cost of borrowing, firms would find it less profitable to invest. [1] The decrease in C and I then leads to a decrease in AD, causing a fall in GPL and offsetting any inflationary pressures as US is facing an inflation rate of 2.3% in 2018. [1] At the same time, NY will fall [1].</p> <p><u>Comment:</u> The impact of the increase of interest rates on US's economy depends on the state of US's economy. With the increase in interest rates, it will cause AD to fall further, resulting in a decrease in NY and hence actual growth. This acts as a drag on US's economy, especially when its growth rate is only at 2.9%. Hence, an increase in interest rate may result in US falling into a recession. [1] Furthermore, inflation is not really an issue that US is grappling with, since the general prices are increasing slowly at 2.3% in 2018. Due to the state of US's economy now, the increase in interest rates may not be appropriate. [1]</p> <p><i>Mark allocation:</i> "Explain" [4m] Explain how interest rates affect C [1] and I [1] and hence GPL [1] and NY [1]. Explain how interest rates affect M. [1] Explain how interest rates affect X [1] and hence BOT. [1]</p> <p>"Comment" [3m] State whether increase in interest rate is appropriate. [1] Explain why increase in interest rate is appropriate or not with reference to the data. [2]</p>	
(d)	(i) Identify which country has the largest change in real GDP per capita in 2018 and support your answer with a calculation.	<b>[2]</b>
	<p>China [1]</p> <p>Since growth in real GDP per capita = Real GDP growth/ Population growth, <math>6.6/0.5 = 13.2</math>, which is the largest change amongst the three countries. [1]</p> <p><i>Identify [1 mark]</i> <i>Calculation [1 mark]</i></p>	

	(ii) Assess whether China, USA or Singapore has the greatest improvement in standard of living.	[8]
	<p><u>Introduction:</u> Define standard of living (SOL)</p> <p><u>Thesis: China has the greatest improvement in SOL in 2018</u></p> <p>Material SOL refers to the quantity of goods and services available to the citizens of the country. Since China experienced the largest increase in real GDP per capita in 2018 as compared to Singapore and USA, the Chinese citizens have a greater increase in disposable income, and hence purchasing power. As such, they experience a greater increase in quantity of goods and services available to them. They are also able to afford better education and healthcare and as such, their non-material SOL improves.</p> <p>Since China has the greatest improvement in real GDP per capita, the Chinese government is also able to collect greater amount of taxes. If this increase in tax revenue is spent on improving the infrastructure for public and merit goods, Chinese citizens will experience a greater improvement in non-material SOL.</p> <p>From Table 3, China also experienced the largest increase in HDI from 2014 to 2017, while Singapore experiencing the small increase. This means that the improvement in terms of literacy rate and life expectancy is the highest. As such, China's non-material SOL has improved the largest amongst the three economies.</p> <p><u>Anti-thesis: China may not have the greatest improvement in SOL in 2018</u></p> <p>However, China may not have the greatest improvement in SOL in 2018 as compared with Singapore. This is because China's unemployment rate is higher than Singapore. This means that there is an increase in number of Chinese citizens who are unemployed in 2018. As such, there are more people with fewer disposable income and hence purchasing power, which reduces their material standard of living, as compared to Singapore.</p> <p>In addition, the larger increase in real GDP may not be distributed evenly across the country, resulting in the average person having lesser improvement in income as compared to the other countries.</p> <p>The largest improvement in SOL in China may have come at the expense of its environment. With more goods and services being produced, there may be increased burning of fossil fuels, which pollutes the environment. Hence, there may be an increase in number of people who are falling sick due to the increase in pollutants in the air in China. As such, non-material SOL in China may not have improved as compared to the other countries.</p> <p><u>Evaluation and Conclusion:</u></p>	

		<p>While China's SOL as compared to the USA and Singapore has seen the largest improvement on average according to Table 2, we will require additional data, such as the change in Gini Coefficient, to find out whether income equality in China has the largest improvement in order to safely say that material SOL in China has improved the most. We also need more data to analyse the change in pollutants in the air, to find out whether China's non-material SOL has indeed improved by a larger extent as compared to USA and Singapore.</p> <table border="1"> <thead> <tr> <th>Level</th> <th>Descriptor</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>Explains how the data shows that China may and may not have the largest improvement in standard of living as compared to USA and Singapore.  Well-explained thesis or anti-thesis – max 4m</td> <td>4-6</td> </tr> <tr> <td>1</td> <td>Answer lacks depth in terms of economic analysis. Answer did not explicitly compare the change in standard of living over space and over time.</td> <td>1-3</td> </tr> <tr> <td>E</td> <td>Makes a judgement that answers the question, and justifies the judgement.</td> <td>1-2</td> </tr> </tbody> </table>	Level	Descriptor	Marks	2	Explains how the data shows that China may and may not have the largest improvement in standard of living as compared to USA and Singapore.  Well-explained thesis or anti-thesis – max 4m	4-6	1	Answer lacks depth in terms of economic analysis. Answer did not explicitly compare the change in standard of living over space and over time.	1-3	E	Makes a judgement that answers the question, and justifies the judgement.	1-2	
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E	Makes a judgement that answers the question, and justifies the judgement.	1-2													
(e)	(i)	Explain why "Singapore conducts monetary policy not by targeting interest rates, but by managing the Singapore dollar nominal effective exchange rate (S\$NEER) within a policy band" (Extract 4).	[8]												
		<p><b>Explain that SG is an interest rate taker.</b> To use interest rates as an instrument, Central banks must have control over the money supply to change the interest rate. However, Singapore has no control over the money supply due to the small and open nature of the economy. [1]</p> <p>Suppose Singapore wants to increase the interest rate, this causes the interest rate in Singapore to be more than interest rates in the rest of the world. As such, there would be large inflows of 'hot' money into Singapore since the returns on 'hot money' would be higher in Singapore than in the rest of the world. The inflow of 'hot money' would increase our domestic money supply and drive down the interest rate in Singapore to the same level as the world interest rate. [1] To prevent this from happening (to maintain a high interest rate as originally intended), the MAS would need the ability to 'absorb' the inflow of 'hot money' to prevent the money supply from expanding. However, being a small economy, it lacks the ability to do so as the 'hot money' flows would be too large relative to the domestic money supply. [1] As such, the 'hot money' flows will ensure that the interest rates in Singapore follow the global interest rates [1].</p> <p><b>Explain that exchange rate has a larger impact on SG's economy.</b></p>													

	<p>Singapore also uses exchange rate instead of interest rates because exchange rates have a larger effect on the Singapore economy. This is due to our lack of natural resources and our dependence on (X-M). [1]</p> <p>Singapore's lack of natural resources causes it to import most of the raw materials needed for producing goods and services. We also import a lot of the final goods and services we consume. This makes us very susceptible to imported inflation. This makes exchange rate policy more effective than interest rate policy in curbing inflation since interest rate policy does not target imported inflation but exchange rate policy does. [1]</p> <p>Additionally, Singapore's small size means that domestic consumption and investment are relatively low. To grow, Singapore needs to increase AD through exporting overseas. This has resulted in the (X-M) component of AD for Singapore to be higher. Again, this makes exchange rate policy is more effective than interest rate policy as it targets (X-M) while interest rate policy doesn't. [1]</p> <p>Finally, due to the low level of domestic investments, most of the investments in Singapore are foreign direct investments. FDI is not influenced by domestic interest rates as their funding is from overseas. [1]</p>	
(ii)	<p>In light of the current economic outlook, assess whether Singapore should change its policy stance of "monetary policy tightening" (Extract 7).  <u>State what monetary policy tightening means in the context of Singapore</u></p> <p>Monetary policy tightening means that Singapore is appreciating its currency.</p> <p><u>Explain how "monetary policy tightening" affects SG's economic aims</u></p> <p>An appreciation will cause imports to be cheaper in SGD. Since Singapore imports a lot of raw materials, an decrease in price of imported raw materials will result in a fall in costs of production. As such, SRAS will increase, resulting in a downward shift of the SRAS curve, and hence reduce the general price levels. Thus, an appreciation of SGD helps to mitigate cost-push inflation, in particular imported inflation.</p> <p>Monetary policy tightening also helped to curb demand-pull inflation in Singapore, especially since (X-M) constitutes a large component of our GDP. <b>An appreciation will cause exports to become more expensive in foreign currency and imports to be cheaper in domestic currency.</b> This will cause a fall in the quantity demanded of exports as foreigners buy less of the exports and a rise in quantity demanded of imports as locals switch to buy more of the cheaper imports. Hence, assuming that both PED<sub>x</sub> and PED<sub>m</sub> are elastic, X-M would decrease, which will lead to a fall in AD, reducing GPL and hence curbing demand-pull inflation.</p> <p><u>Thesis: SG should change its policy stance</u></p>	[12]

According to Extract 7, there are uncertainties in the global economy. As a result, Singapore's trade has been sluggish, hence (X-M) is increasing slowly. At the same time, due to the economic slowdown in China, the Chinese experience a fall in national income and hence purchasing power. This means that they will demand for fewer goods and services, including imports. Since Singapore and China are trading partners, Singapore's demand for exports from China will fall, resulting in a fall in (X-M) and hence AD. This will act as a drag on Singapore's economic growth.

In addition, there global oil prices are expected to fall (Extract 7). This means that cost of production is expected to fall, resulting in an increase in SRAS and hence a fall in GPL. This curbs cost-push inflation, in particular imported inflation as Singapore imports oil.

Given the above events, inflation is not an issue that is facing Singapore. This is also corroborated with the low inflation rate of 1.9% in 2018 as seen in Table 2. As such, the current monetary policy tightening stance should change as the current policy is less relevant. Since Singapore's economic growth is expected to slow, the MAS should consider adopting a zero appreciation policy so as to remove the drag caused by the monetary policy tightening as well as the fall in demand for Singapore's exports.

Anti-thesis: Singapore should not change its policy stance

If Singapore changes its currency stance to that of depreciation so as to increase its (X-M), according to Extract 5, the depreciation could likely destabilise countries in Asia due to the relatively high levels of US dollar denominated corporate debt accumulated by many Asian firms. With depreciation of SGD, USD is now more expensive in terms of SGD. As a result, the debt, which is incurred in terms of USD, will be more expensive for Singapore firms to repay. This may result in a fall in investments due to the repayment of the debt, resulting in a fall in AD and hence the fall in national income, worsening economic growth.

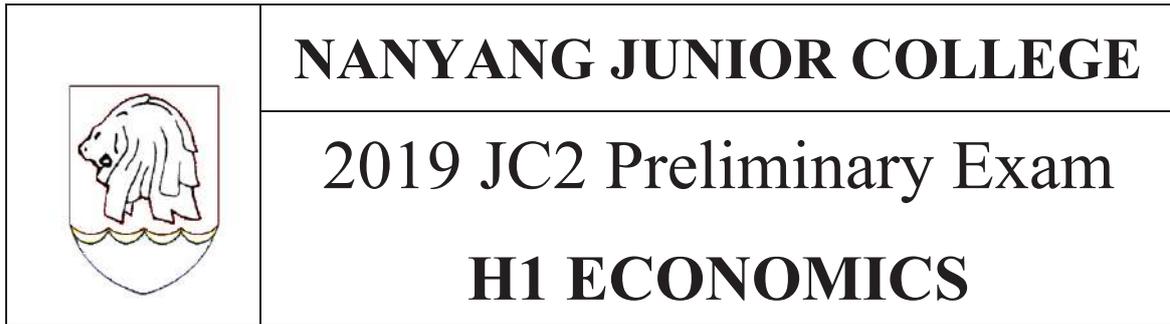
Hence, the Singapore government should continue its policy stance of gradual and modest appreciation.

Conclusion:

Whether the Singapore government should change its policy stance depends on whether the benefits of the continuation of the gradual appreciation of exchange rate outweighs the costs. Given the poor economic outlook as well as Singapore's current state of the economy, continued appreciation may result in the worsening of the slowdown of economic growth. However, since Singapore depends on imported goods and services, depreciation of SGD may also bring out negative impacts. As such, MAS should consider easing the gradual appreciation to the drag on Singapore's economic growth, given the current economic outlook.

Level	Descriptor	Marks
3	Explains the reasons for and against Singapore changing its monetary policy stance. Explanations take into account the current economic outlook.	7-9
2	Explains the reasons for or against Singapore changing its monetary policy stance.	4-6
1	Answer lacks depth in terms of economic analysis. For an answer that explains how exchange rate policy works.	1-3
E2	Makes a judgement that answers the question and justifies the judgement	2-3
E1	Makes a judgement that answers the question	1





Paper No: 8823/01

3<sup>rd</sup> September 2019  
Tuesday

Time : 0800 – 1100 hrs  
Duration : 3 hours

**READ THESE INSTRUCTIONS FIRST**

**Do not flip the pages of this paper until you are told to do so.**

Write your name, class and name of your economics tutor in the space provided on the answer booklet.

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

Write your answers on answer booklet provided. If you use more than one answer booklet, slot the additional booklets into the first booklet.

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

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

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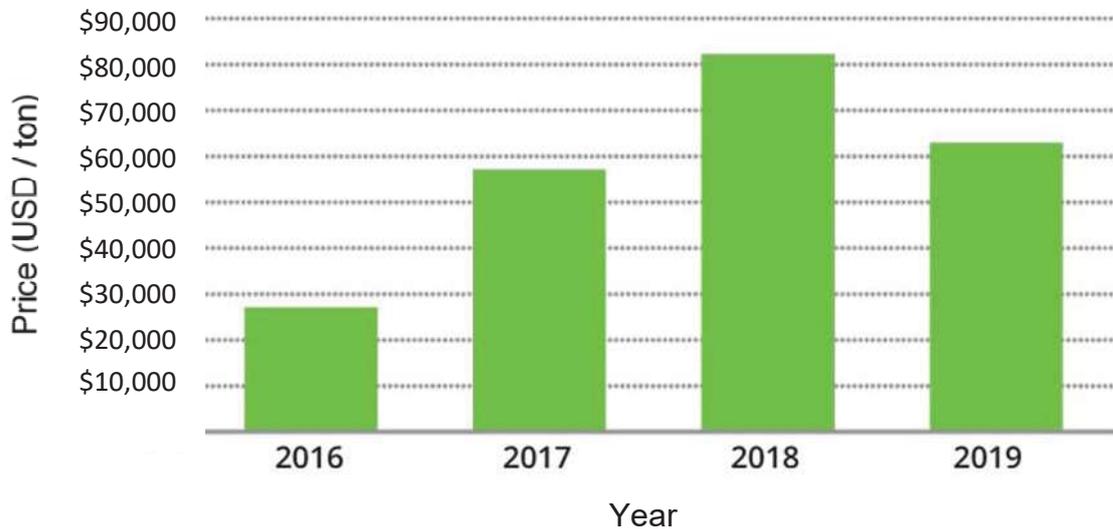
There are 9 printed pages including this cover page

## Answer all questions

### Question 1

#### Electric cars to the rescue?

Figure 1: Global price of cobalt



Source: VP Solar, 3 July 2019

#### Extract 1: Technology fueling the demand for the once-obscure cobalt

The once little-known element cobalt is rapidly rising in price, and some warn shortages could hit the metal in the future. Cobalt is a key ingredient in the production of lithium-ion batteries. It is also widely used in the production of turbine engines due to its ability to withstand high temperature. The proliferation of lithium-ion batteries in electronics and electric cars is the chief factor fueling this rise in price and concerns among companies over the security of their supplies.

Demand for cobalt in car battery materials is expected to grow more than 40 percent in 2018, according to U.K.-based cobalt trading firm Darton Commodities. Electric and hybrid car adoption in China and Europe are projected to be significant contributors, Darton said in its annual Cobalt Market Review report published in February.

While engineers can sometimes find ways to change designs or use substitutes for some elements, cobalt could be tough to replace. There are potential substitutes, but substitution in some uses may lead to losses in performance.

Mining companies such as ERG and Glencore are planning new cobalt operations that may balance supply and demand in the near term, but if electric cars continue to gain market share, any stabilization may be short-lived. "While production increases are expected to level off by around 2022, demand is expected to accelerate further as electric cars will be close to reaching cost parity with fuel-powered cars by this time," Darton said in its report.

Source: CNBC, 16 April 2018

### **Extract 2: Traffic jams cost Beijing \$11.3b a year**

Beijing's annual bill for traffic congestion amounts to 70 billion yuan (\$11.3 billion), a recent study has found.

According to a 2014 survey conducted by Peking University's National Development Research Institute, 80 percent of total loss relates to time wasted waiting, 10 percent to fuel and 10 percent to environmental damage.

Statistics drawn up by Beijing Department of Transportation shows that in 2013, the capital's average daily congestion time came to one hour and 55 minutes, 25 minutes longer than in 2012. The waste in fuel is increasing rapidly as more and more cars hit the road. In 2013, 21.98 million vehicles were sold in China, up by 14 percent over 2012. Idling time also adds to Beijing's already-bad environmental problem via increased emissions.

In future, Beijing will continue studying proper economic policies and use technology to build a smart city and improve the public traffic experience.

Source: China Daily, 9 September 2014

### **Extract 3: The electric car revolution will be born in China**

The electric car revolution is coming, but it won't be driven by the US. Instead, China will be at the forefront.

In 2018, Chinese sales topped 1.1 million cars, more than 55 per cent of all electric cars sold in the world, and more than three times as many as Chinese customers had bought two years earlier. US electric car sales that year were just 358,000.

China has a fledgling, but ambitious, automobile industry. It has never been able to match the efficiency and quality of established automakers at making fuel-powered cars, but electric cars are easier to build, giving Chinese firms a new opportunity to compete.

The Chinese government, therefore, has chosen to highlight electric cars as one of 10 commercial sectors central to its "Made in China" effort to boost advanced industrial technology. Government efforts include using billions of dollars to subsidise manufacturing of electric cars and batteries, and encouraging businesses and consumers to buy them.

The government is also aware that electric cars could help solve China's most pressing environmental concern: Massive air pollution in its major cities.

Source: Channel NewsAsia, 17 June 2019

### **Extract 4: Electric Car Fires in China Should Set Off Alarms**

Somewhere in Shanghai, a camera caught an electric car bursting into flames in a parking garage. On Sunday night, the video began circulating on social media. Hours later, a Shanghai-based electric car maker announced that one of its electric cars had burst into flames during a repair in its workshop.

Batteries are the most common source of problems. Some do not perform as advertised. Others drain unusually fast. Still others run dangerously hot. More than 40 electric cars spontaneously combusted in China in 2018.

Other issues included faulty motors, faulty transmissions, faulty odometers and bad odours, a problem to which Chinese consumers are particularly sensitive.

Source: Bloomberg, 20 March 2019

### **Extract 5: Electric Cars Don't Reduce Congestion**

To combat climate change and improve quality of life, active travel modes should be given priority over car use, argues an academic report produced by the Center for Research into Energy Demand Solutions (CREDS), a consortium of 40 academics at 13 U.K. institutions.

The report argues that use of electric cars, which are cheaper to run than fuel-powered cars, has the potential to increase car use and therefore would lead to more congestion and a more unhealthy society with greater prevalence of obesity. CREDS calls on the government to devise strategies allowing people to have a good standard of living without needing cars.

“Relying mainly on electrification of cars to reach carbon targets can have the consequence of increasing traffic congestion because of the lower cost and lower taxation of electricity,” states the report.

Everyday travel should be shifted to the “most sustainable modes,” add the academics. Priority on roads should be given to “walking, cycling and public transport,” they argue.

Source: Forbes, 5 July 2019

## Questions

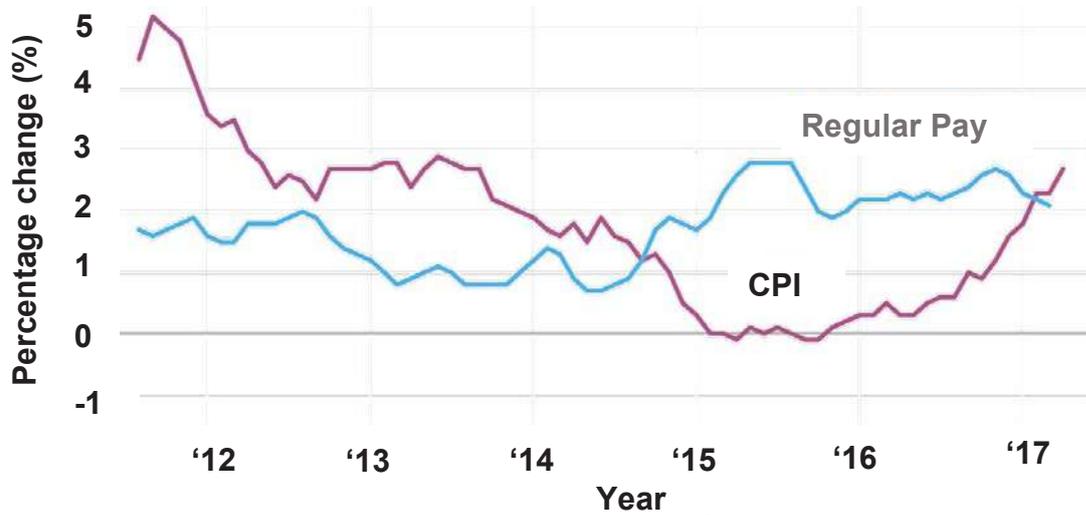
- (a) Using a production possibility curve, explain the trade-off that exists between cobalt for lithium-ion batteries and cobalt for other uses. [2]
- (b) (i) Describe the trend in the global price of cobalt from 2016 to 2018. [2]
- (ii) Define price elasticity of demand and price elasticity of supply. [2]
- (iii) With reference to Extract 1, assess the importance of price elasticity of demand and price elasticity of supply in explaining the trend observed in part (b)(i) [6]
- (c) (i) With the aid of a diagram, explain why there is an inefficient allocation of resources in the market for fuel powered cars. [4]
- (ii) Extract 3 suggests that electric cars could solve the inefficient allocation of resources mentioned in (c)(i). [8]
- Assess other strategies, besides the use of electric cars, the Chinese government could adopt to solve the market failure mentioned in part (c)(i).
- (d) What is the main characteristic of a normative economic statement? Identify one example of such a statement from Extract 5. [2]
- (e) Explain how public goods lead to market failure, and comment on whether such market failure exists in the market for public transport. [7]
- (f) Using evidence from the case study and/or your own knowledge, discuss the factors that the Chinese government would consider in subsidising production of electric car. [12]

[Total: 45 marks]

Question 2

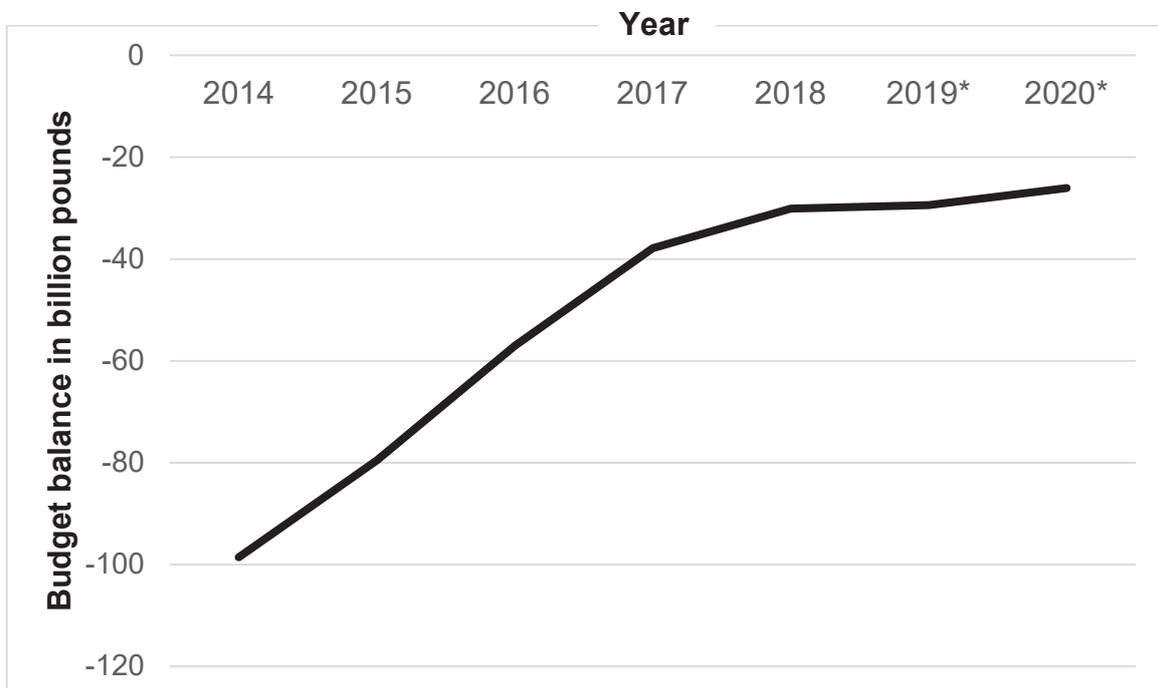
Raising Standard of Living

Figure 2: Annual inflation rate vs average regular pay growth in the UK



Source: Atlas, accessed 26 July 2019

Figure 3: UK government budget balance from 2014 to 2020 (in billion pounds)



Source: Statista, accessed 26 July 2019

### **Extract 6: Living standards in UK fall for the first time since 2014**

UK consumers are suffering a sustained fall in living standards as real pay fell again in the three months to May, piling more pressure on cash-strapped households. This shrinks family incomes and signalling a weaker outlook for consumer spending.

Frances O'Grady, said the government must intervene to address the pay squeeze. "Three months of falling pay is three months too many. The clock is ticking while workers wait for the government to act," she said.

"Ministers must set out a plan to get real wages rising across the public and the private sectors. They should start by scrapping the unfair pay restrictions on nurses, midwives and other public sector workers. And the minimum wage must be raised to £10 as quickly as possible."

Damian Hinds, the employment minister, focused on the strong employment figures, describing them as "another reminder that our strong economy is giving record numbers of people the chance to find and stay in work". Before inflation, regular pay growth excluding bonuses picked up slightly to 2% year on year in the three months to May, from 1.8% in the three months to April.

However, that was still well below inflation, which hit a four-year high of 2.9% in May. Inflation has risen rapidly since the Brexit vote last June triggered a sharp drop in the value of the pound.

John Hawksworth, chief economist at PwC, said that "Real earnings growth remains deep in negative territory and this seems unlikely to change any time soon. This will dampen consumer spending power, though the continued strength of the jobs market should prevent the recent slowdown in the economy turning into a recession."

Ian Kernohan, an economist at Royal London Asset Management, said that inflation is now above the Bank's target level of 2% and real earnings growth has slipped into negative territory.

"This is having a negative impact on household spending. With uncertainty gathering over the Brexit negotiations, the Bank of England's monetary policy committee would need to see a distinct improvement in earnings growth towards 3% and above, to be in a position to raise interest rates."

Source: *The Guardian*, 12 July 2017

### **Extract 7: The falling pace of standard of living in Hong Kong**

On January 16, state-run media gleefully announced that Shenzhen last year had surpassed Hong Kong's economic output to hit 2.2 trillion yuan (US\$338 billion) on the back of 8.8 per cent growth.

However, analysts said that using GDP alone to compare the cities would be inadequate, with GDP per capita – output divided by population – a better indication of standard of living.

Using this measure, Hong Kong, at US\$44,000, was doing better than Shenzhen (US\$25,000) and Guangzhou (US\$21,000), Ayesha Macpherson Lau, managing partner of professional services firm KPMG's Hong Kong office, pointed out.

"Hong Kong has the highest standard of living and is still way ahead," she said.

But lawmakers and entrepreneurs looking to the future said that with neighbouring cities catching up, Hong Kong needed to hustle to maintain its standing as a competitive and vibrant economy. So what could it do to achieve this and even leapfrog the competition?

Shenzhen's manic pace of growth in the last decade was fuelled by an abundance of labour and capital invested in R&D and innovation. In contrast, Hong Kong spent the same period grappling with a tourism downturn, political upheaval and skyrocketing property prices. It also stubbornly remained reliant on its traditional pillar industries – retail, property, financial services and shipping – and fell behind neighbours such as Japan, South Korea and Singapore when it came to investing in R&D, fostering innovation and nurturing home-grown talent.

"Hong Kong is already a very mature and efficient economy. If it wants to have higher economic growth, it must increase inputs, which are capital, labour and efficiency," Chinese University of Hong Kong economics professor Terence Chong Tai-leung said, adding that as an international financial centre, capital was not a problem.

*Source: South China Morning Post, 28 January 2018*

#### **Extract 8: Sustaining standard of living using the 'human capital project'**

Three years ago the world lined up behind an ambitious set of targets – the sustainable development goals – for 2030. The checklist included the eradication of extreme poverty, ending preventable child deaths and delivering quality universal education. As part of the pledge, governments committed to achieving the most rapid progress among populations left furthest behind.

Extreme poverty has fallen dramatically and child deaths have halved. Yet the pace of global poverty reduction is slowing and the number of extreme poor in Africa is still rising.

The World Bank is using this year's International Monetary Fund/World Bank annual meeting to launch a "human capital project". The aim is to fundamentally reconfigure how governments view investment. The World Bank's president, Jim Kim, will warn the Bali meeting that short-sighted approaches to economic growth are skewing towards economic infrastructure – such as new roads and bridges – and away from human capital investments in the health, education and nutrition of people. Underinvestment in human capital is not just catastrophic for the 2030 goals, but also bad for economic growth. Sustainable economic development requires both.

Inequality is at the heart of this shortfall. Poverty is falling too slowly, in part because the benefits of growth in Africa and elsewhere are skewed towards the wealthy. Child mortality is coming down, but death rates among the poorest children in many countries are still two to three times higher than those for the richest. Girls, children with disabilities and minority groups are also left behind. Social disparities are declining at a glacial pace, not least because governments have failed to act on a commitment to invest in truly universal health coverage.

Tackling the power relationships behind these inequalities will take more than policy pronouncements. Countries such as India and Nigeria are spending less than 1% of national income on health, effectively denying their citizens access to care – and consigning children to early graves. Like many of the governments it will justifiably criticise, the World Bank itself has been underinvesting in education.

*Source: The Guardian, 9 October 2018*

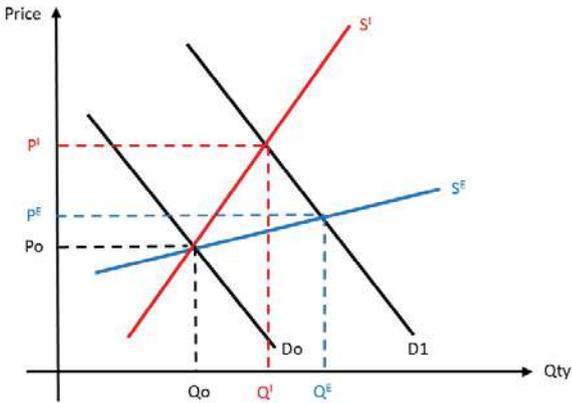
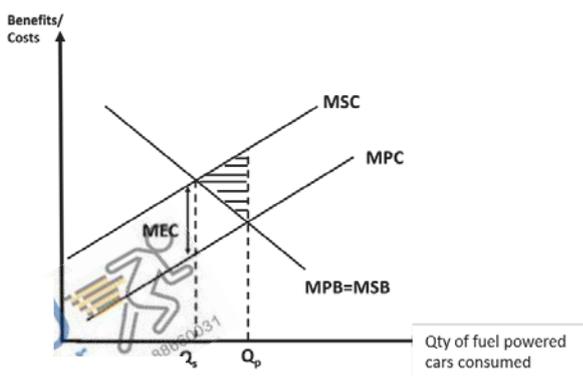
## Questions

- (a) (i) State two main components of a government's budget. [2]
- (ii) Using Figure 3, describe the trend in the government budget balance in UK between 2014 and 2018. [2]
- (b) Using Figure 2, explain how the data might be used to estimate changes in the average standard of living in the UK over this period. [3]
- (c) Use the concept of opportunity cost to explain one effect on each of households and the government arising from the fall in real pay as described in Extract 6. [4]
- (d) With reference to Extract 6 and using an AD/AS diagram, explain how the suggestion of raising the minimum wage "to £10 as quickly as possible" is likely to impact UK's economic growth. [6]
- (e) Explain how Shenzhen was able to fuel its 'manic pace of growth in the last decade' (Extract 7) and comment on whether Hong Kong should adopt this approach to boost its GDP growth rates. [7]
- (f) Extract 8 suggests that economies should skew away from investments in economic infrastructure to human capital project to aim for sustainable economic development. [9]
- Assess whether the human capital project is always a better approach for economies such as Africa to achieve sustainable economic development.
- (g) In light of rising inflation rates, discuss the view that increasing interest rate is the best policy option for the UK government to raise real pay. [12]

[Total: 45 marks]



(a)	<p>Using a production possibility curve, explain the trade-off that exists between cobalt for lithium-ion batteries and cobalt for other uses.</p> <p>If more cobalt is used to produce one more unit of lithium batteries, from B1 to B2, less cobalt will be available for other uses and more of the other goods, from O1 to O2, will be have to be forgone. [1]</p> <div> </div> <p>Diagram [1]</p>	[2]
(b)	<p>(i) Describe the trend in the global price of cobalt from 2016 to 2018.</p> <p>Increasing trend. [1] Largest increase in 2017. [1]</p>	[2]
	<p>(ii) Define price elasticity of demand and price elasticity of supply.</p> <p>PED measures the responsiveness of quantity demanded of a good due to a change in the price of a good, ceteris paribus. [1]</p> <p>PES measures the responsiveness of quantity supplied of a good due to a change in the price of a good, ceteris paribus. [1]</p>	[2]
	<p>(iii) With reference to Extract 1, assess the importance of price elasticity of demand and price elasticity of supply in explaining the trend observed in part (b)(i)</p> <p>The increasing trend in the price of cobalt in (b)(i) is due to an increase in demand for cobalt. Mentioned in extract 1, demand for cobalt in car battery materials is expected to grow more than 40% in 2018. [1]</p> <p>With an increase in demand from <math>D_0</math> to <math>D_1</math>, price of cobalt will increase. However, the extent of the increase will depend on PES. If supply is price elastic, price will increase from <math>P_0</math> to <math>P^E</math>. [1]</p> <p>If supply is price inelastic, price will increase more from <math>P_0</math> to <math>P^I</math>. [1]</p>	[6]

		 <p>Diagram [1]</p> <p>Thus, PES is important as it accounts for the extent of increase in price due to an increase in demand. [1]</p> <p>PED is not important as supply of cobalt did not change in the same time period. [1]</p>	
(c)	(i)	<p>With the aid of a diagram, explain why there is an inefficient allocation of resources in the market for fuel powered cars. [4]</p> <p>Consumption of cars generates negative externality. From Ext 2, there is increased emission and traffic congestion. These generates MEC to 3<sup>rd</sup> party in the form of higher healthcare cost and time cost. [1]</p> <p>Consumers of cars maximise satisfaction and consume <math>Q_p</math> units where <math>MPB = MPC</math>. To maximise social welfare, consumption should be <math>Q_s</math> units where <math>MSB = MSC</math>. [1]</p> <p>Since <math>Q_p</math> is more than <math>Q_s</math>, there is overconsumption resulting in a deadweight loss. [1]</p>  <p>Di</p>	[4]
	(ii)	<p>Extract 3 suggests that electric cars could solve the inefficient allocation of resources mentioned in (c)(i). [8]</p> <p>Assess other strategies, besides the use of electric cars, the Chinese government could adopt to solve the market failure mentioned in part (c)(i).</p>	

## Suggested answer

### Question Analysis

- Command: Assess
  - 2-sided
  - Weighing of pros and cons
- Content:
  - Strategies to address the issue of over-consumption.
  - Could be market based approach or command & control policies.
- Context:
  - China

### Introduction

Over-consumption of fuel powered cars cause 2 main types of negative externalities

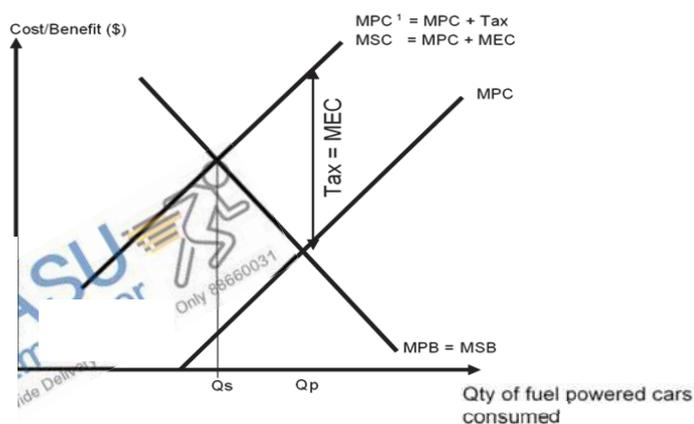
- Congestion
  - As mentioned in extract 2, "...the capital's average daily congestion time came to one hour and 55 minutes, 25 minutes longer than in 2012".
- Pollution
  - As mentioned in extract 2, "Idling time also adds to Beijing's already-bad environmental problem via increased emissions".

### Body

#### Strategy 1: Imposing tax on car users

When the government imposes a tax on car users that correspond to the MEC they exert on society, it increases in the costs of owning of cars.

If this tax accurately reflects the MEC, car users in effect now have to pay for the use of cars which results in negative externality and their MPC will now coincide with the MSC.



Thus, the marginal private cost of the car user, after taking into account of the indirect tax, now rises to  $MPC^1$ . The externality has then been taken into account by the car users in their decision-making.

As a result, at consumption  $Q_p$ ,  $MPC_1 > MPB$ , car users would maximise their net private benefit by consuming till  $MPC_1 = MPB$  i.e at  $Q_s$ . This leads to consumption coinciding with the socially optimal output.

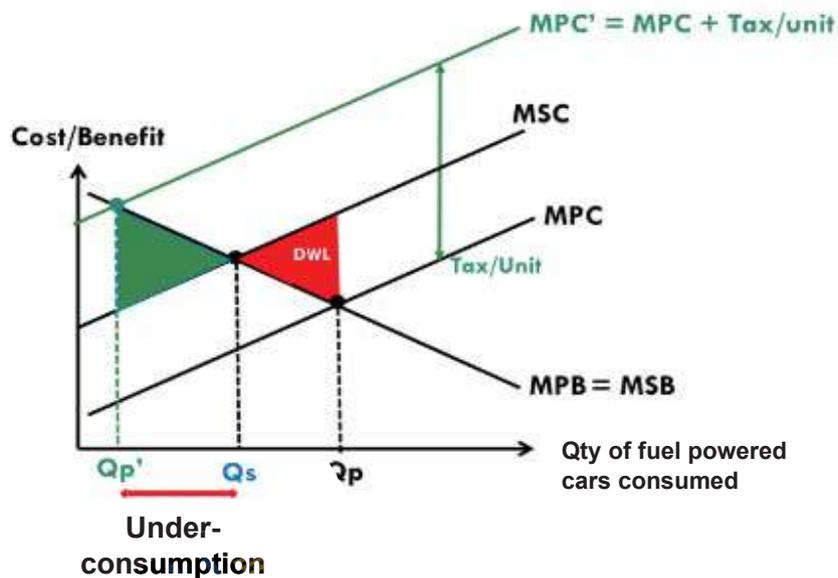
Strengths of strategy 1

1. Forces the car user to take into account or internalise the external costs imposed on third parties hence raising the car user's MPC which would lead reduced consumption.
2. Taxation is flexible in that it could be varied or adjusted according to the magnitude of the problem or the size of MEC.

Limitations of strategy 1

1. The Chinese government that decides the size of the tax inevitably has imperfect knowledge as the external costs incurred is sometimes difficult to measure accurately given that the costs incurred by 3rd party (i.e. stress linked to traffic jams) is intangible and it is difficult to place monetary value on them. As such, the government might have difficulty ascertaining the right amount of taxation to be imposed on car owners.

Under-taxation will not completely eliminate the deadweight loss to society and over taxation will lead to deadweight loss being created. Hence, the outcome is still likely to be inefficient. Diagram below shows deadweight loss being created when government over taxes.



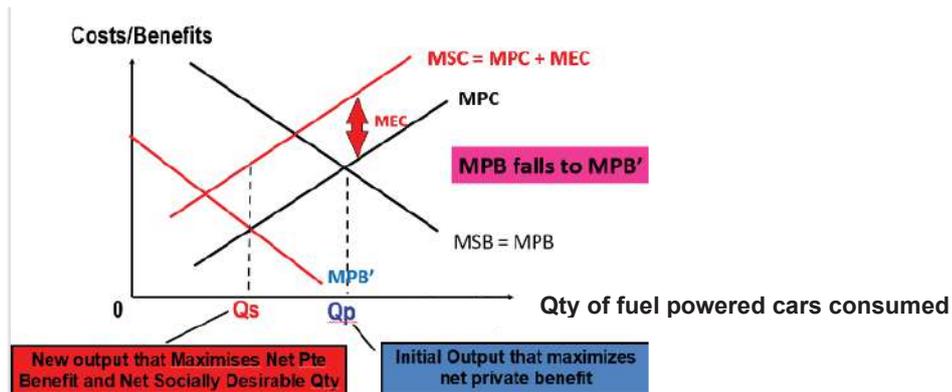
2. People tend to estimate & set aside expenses for regular activities. Total cost of using a car becomes less salient over time.
3. Taxation is regressive, thereby politically unpopular. Tax takes up a larger proportion of the lower income, thereby making the lower income earners worse off, favouring the higher income earners instead.

### Strategy 2: Creating a more Efficient & Affordable Public Transportation System

Increasing accessibility of public transportation.

By providing efficient and affordable public transportation, this encourages consumers to switch from fuel powered car usage to public transportation since public transportation is viewed as a better substitute

Fewer vehicles on the road would lead to lesser traffic congestion & air pollution.



#### Strengths of strategy 2

1. Reduces the usage of fuel powered cars which reduces congestion.
2. Increases the standard of living of the residents e.g. better accessibility, lesser time spent on travelling, affordable transportation.

#### Limitations of strategy 2

1. Depends on the perceptions of the public. Cars are viewed as a status symbol. The more well-off people in China are, the higher the demand for cars. Hence, public transportation may then be viewed as a weak substitute.
2. Government incurs an opportunity cost.

**\*\*Other strategies like quota will also be accepted.**

#### Conclusion

It is advisable for the Chinese government to implement a combination of taxation and creating a more efficient and affordable public transport system as these two strategies would help to reduce the consumption of fuel powered cars and hence reducing congestion and pollution.

In addition, the strategy to create a more efficient and affordable public transport would help to make the country more attractive to investors and tourists hence increasing AD which leads to increase RNY in China.

However, in order to ensure the efficient working of strategies such as taxation, the Chinese government needs to continually carry out checks to ensure that taxation is determined as accurately as possible so that

	<p>the consumption of cars will be near to the socially optimal level as possible.</p> <table border="1"> <thead> <tr> <th>Level</th> <th>Descriptors</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>L2</td> <td>           Well-developed explanation of 2 strategies           <ul style="list-style-type: none"> <li>- Fully labelled and correctly drawn diagrams to illustrate how the strategies work to address the issue of over-consumption.</li> <li>- Strengths and limitations of each of the strategies were explained.</li> </ul>           OR            Well-developed explanation of only 1 strategy – max 4m         </td> <td>4-6</td> </tr> <tr> <td>L1</td> <td>Under-developed explanation of 1 or 2 strategies i.e. strengths and limitations were not given for each of the strategies or only given for 1 strategy, cost/benefit diagrams were not used or partially used to illustrate how the strategies work.</td> <td>1-3</td> </tr> <tr> <td>E2</td> <td>A valid, evaluative judgement which explains which strategy should be used to solve the issue of over-consumption of fuel powered cars.</td> <td>2</td> </tr> <tr> <td>E1</td> <td>An unexplained judgement.</td> <td>1</td> </tr> </tbody> </table>	Level	Descriptors	Marks	L2	Well-developed explanation of 2 strategies <ul style="list-style-type: none"> <li>- Fully labelled and correctly drawn diagrams to illustrate how the strategies work to address the issue of over-consumption.</li> <li>- Strengths and limitations of each of the strategies were explained.</li> </ul> OR Well-developed explanation of only 1 strategy – max 4m	4-6	L1	Under-developed explanation of 1 or 2 strategies i.e. strengths and limitations were not given for each of the strategies or only given for 1 strategy, cost/benefit diagrams were not used or partially used to illustrate how the strategies work.	1-3	E2	A valid, evaluative judgement which explains which strategy should be used to solve the issue of over-consumption of fuel powered cars.	2	E1	An unexplained judgement.	1	
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(d)	<p>What is the main characteristic of a normative economic statement? Identify one example of such a statement from Extract 5.</p> <p>The main characteristic of a normative economic statement is that it is subjective in nature. [1]</p> <p>One example is “active travel modes should be given priority over car use”. [1]</p>	[2]															
(e)	<p>Explain how public goods lead to market failure, and comment on whether such market failure exists in the market for public transport.</p> <p><b>Public goods are goods that can be collectively consumed and are, at least to some degree, both non-rivalry in consumption and non-excludable.</b></p> <p><b>Non-rivalry</b> in consumption means that the <b>consumption of the good does not reduce the total supply available to others.</b> For example, if the existence of national defence prevents hostile aggressors from invading Singapore, the enjoyment of that protection by the individual or his family does not diminish its value or availability to his neighbours. The non-rivalry characteristic implies that the same unit or amount of the good can be collectively consumed. This will result in the marginal cost of</p>	[7]															

	<p>serving another consumer to be zero once the good has been made available (i.e. the good can be used by increasing number of people at no additional production cost). <b>This implies that there is no effective supply (since <math>MC=0</math>).</b></p> <p><b>Non-excludability</b> in consumption means that <b>once the good is made available, it is difficult or costly to exclude non-payers from consuming it.</b> For instance, once national defence is provided for the country, and even if the neighbours do not pay their share of maintaining the national defence, they still enjoy the full value of the protection. Hence everyone in the country (foreigners or locals) benefit from national defence, even the non-paying residents (people who do not pay taxes like low income earners and students). This means that <b>nobody would be willing to pay for the ‘public’ good</b> and thus there will be a <b>concealed demand or no effective demand in the market.</b></p> <p>The ‘free-rider’ problem arises when consumers know that it is almost impossible or very costly for firms to exclude them from the consumption of the good without paying. As a result, firms would be unable to recoup the money invested in the production of public goods (had it been produced) and this would adversely affect the sellers’ self-interest of maximizing their net benefits (i.e. maximizing profits). The result of this would mean that no private firms would want to undertake production of goods that are purely non-rivalrous and non-excludable in consumption.</p> <p>Hence, the characteristics of public goods as mentioned above would result in a <b>‘missing market’</b>. <b>The missing market is deemed as a market failure as there is zero-consumption (or zero-production) of a socially desirable good due to the market’s ‘non-existence’</b>. The non-provision of public goods significantly <b>deprives society from reaping the significant welfare gains (hence, incurring deadweight loss)</b> had the good been made available by the free market.</p> <p>Such market failure does not happen in the market for public transport as public transport is a private good with the characteristics of ‘excludability’ and ‘rivalry in consumption’.</p> <ul style="list-style-type: none"> <li>• <b>‘Excludable in consumption’</b> means that people can be <b>prevented from consuming public transport</b> e.g. bus, MRT <b>when they do not pay for it.</b> The excludability nature of public transport <b>will not result in the ‘free-rider’ problem</b> (i.e. no one can consume public transport without paying for it). This would mean that the <b>good is marketable and private firms would be able to undertake the production of public transport as the money invested in it could be recouped.</b></li> <li>• <b>‘Rivalry in consumption’</b> refers to a situation where an <b>individual’s consumption of public transport e.g. bus, MRT diminishes the total available supply for other consumers in terms of the number of seats and space capacity.</b> The rivalry characteristic implies that the <b>same unit of the good cannot be collectively consumed. The good is divisible</b> (i.e. it can be produced and sold in small units). <b>This will result in the marginal cost of adding another consumer to be positive</b> (i.e. in order to provide an additional consumer with the good, there would be a</li> </ul>	
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need to produce an additional unit). This will **increase the cost of production.**

Level	Descriptors	Marks
L2	<p>Well-developed explanation of the process in which public goods lead to market failure which must include the following:</p> <ul style="list-style-type: none"> <li>- Definition of public good</li> <li>- 2 characteristics of public good (non-rivalry and non-excludable)</li> <li>- Link non-rivalry to <math>MC=0</math> (i.e. no effective SS)</li> <li>- Link non-excludable to no effective DD and free rider problem</li> <li>- Tie back to why the characteristics of public good lead to market failure – ‘missing market’ (no consumption/ production of a socially desirable good which deprives society from reaping welfare gains hence incurring DWL)</li> </ul> <p><i>*For students who gave a well-developed explanation of the process <u>but did not tie back to why the characteristics of public good would lead to market failure</u> – max 4m</i></p>	3-5
L1	Under-developed explanation of the process in which public goods lead to market failure.	1-2
E2	<p>A valid, evaluative comment on why market failure does not exist in the market for public transport which should include the following:</p> <ul style="list-style-type: none"> <li>- Identification that public transport is a private good</li> <li>- 2 characteristics of private good</li> <li>- Link excludability to non-existence of free-rider problem -&gt; marketability of good -&gt; incentivised private firms to produce the good</li> <li>- Link rivalrous to MC being positive -&gt; increase COP</li> </ul>	2
E1	An unexplained comment.	1

(f)

Using evidence from the case study and/or your own knowledge, discuss the factors that the Chinese government would consider in subsidising production of electric car.

**Introduction**

The objective of a government is to maximise social welfare, which is achieved when production takes place up to the quantity where marginal social benefits (MSB) = marginal social costs (MSC).

[12]

In considering whether to subsidise production of electric cars, the Chinese government would consider various factors such as:

1. Constraints
2. Benefits
3. Costs
4. Information
5. Intended and unintended consequences
6. Perspectives of relevant stakeholders

### Body

#### 1. Constraints

One factor that the Chinese government needs to consider is the constraints it faces as the constraints will limit the available choices and their associated benefits and costs.

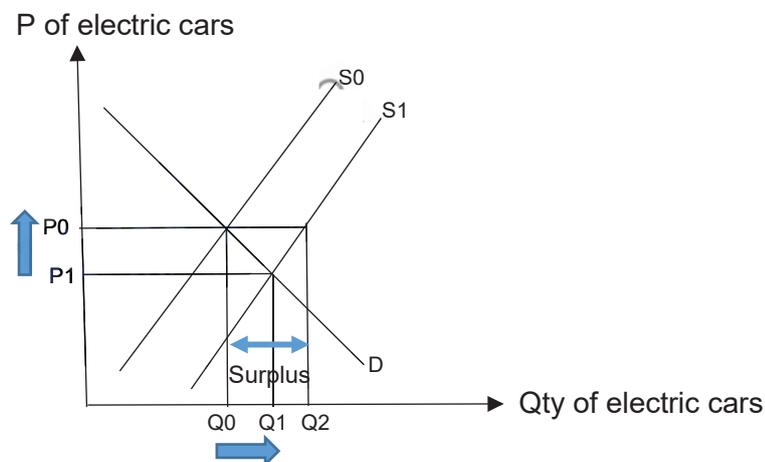
These constraints include the budget constraint and the priority of economic aims.

For example, if China is facing a budget deficit, it might not be able to subsidise the production of electric cars. Moreover, it also depends if China has other pressing issues such as worsening of growth which would require the country to allocate resources towards, hence subsidising the production of electric cars would not be a priority.

#### 2. Benefits

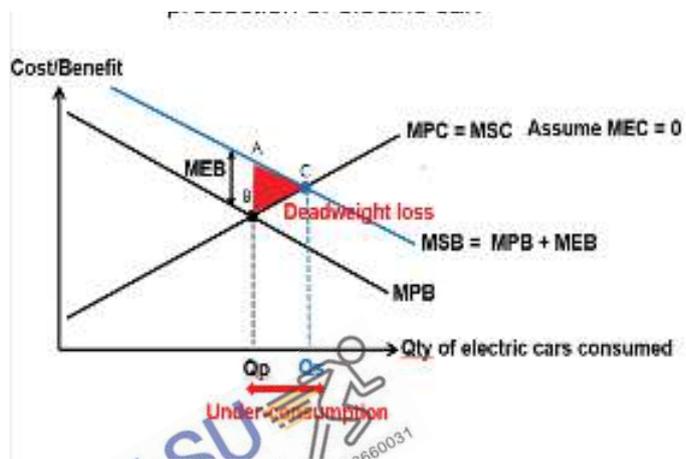
Another factor which the Chinese government needs to consider will be the benefits from the production of electric cars.

By subsidising the production of electric cars, the cost of production decreases which leads to an increase in supply of electric cars. As shown in the diagram below, SS curve shifts rightwards from SS0 to SS1. At original price, P0, there is a surplus Q2Q3 which puts a downward pressure on price. Qty DD will continue to rise and qty SS will continue to fall until the surplus is eliminated and the new equilibrium price and quantity are reached. Equilibrium price will fall from P0 to P1 and equilibrium qty will increase from Q0 to Q1.

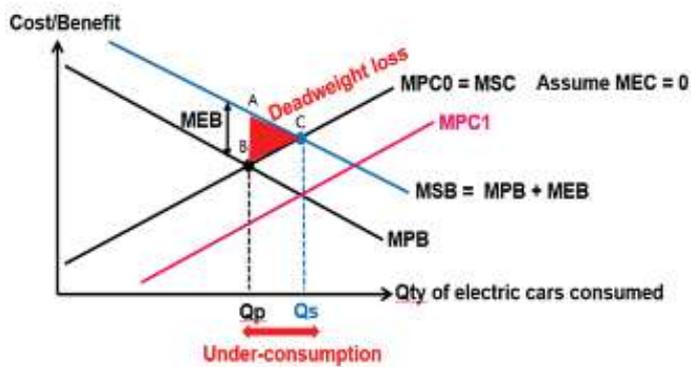


With the fall in the price of electric cars, it will help to increase the consumption of electric cars.

An individual consumer will consider his marginal private benefit (MPB) – e.g. convenience, comfort etc... and marginal private cost (MPC) – e.g. cost of the car, parking charges, road tax, COE etc... when deciding whether to buy an electric car. Private optimal qty is determined when the individual maximised his welfare by equating  $MPB=MPC$  at  $Q_p$ . When the individual drives an electric car, in addition to its direct private costs (i.e. cost of the car, COE etc...), its consumption may bring about benefits to others. People (third party: people living near the main roads, employers etc...) may experience benefits such as cleaner air, increased production -> greater profitability). The existence of a positive externality in consumption creates a divergence between the MPB and the MSB equal to the value of the externality (i.e. the MEB).  $MSB = MPB + MEB$ . Society would maximize its net social benefit at the output level where the value of benefits of the last unit of the good to society (MSB) is equal to the value of the resources needed to produce the good for society (MSC),  $MSB = MSC$  (i.e. only at  $Q_s$ ). From society's viewpoint, at the market output  $Q_p$ ,  $MSB > MSC$ . This means this level of consumption adds more to benefits than costs for the society and society's welfare is not maximized. The failure of the first party (i.e. individual) to take into account the positive externality results in net benefit to society given by the shaded region ABC which represents the monetary measure of welfare gain to society. This is known as deadweight loss to society. Since the quantity that maximizes the individual's benefit ( $Q_p$ ) is at a lower level than the quantity that maximizes society's benefit ( $Q_s$ ), there is under-consumption from a societal perspective. Society would be better off if consumption is at the socially optimal output ( $Q_s$ ) instead of  $Q_p$ . Hence at  $Q_p$ , there is an under-allocation of resources and under-consumption of the good. Thus, under-consumption leads to an unnecessary cost incurred on society as indicated by the deadweight loss.

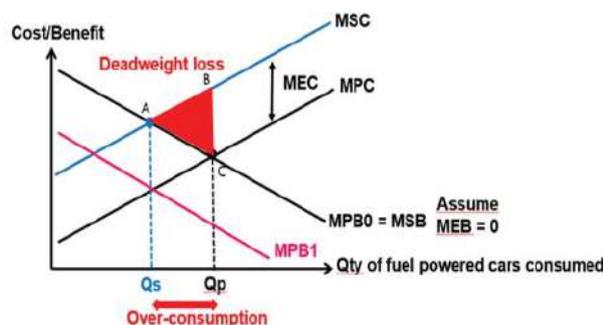


Given that the price of electric cars has decreased, this will lower the individual's MPC. Hence MPC curve will shift downwards from  $MPC_0$  to  $MPC_1$  until it coincides with MSB. The allocative efficient consumption level  $Q_s$  is achieved and the deadweight loss is eliminated. When more electric cars are consumed, pollution problem would be reduced.



Decreased price of electric cars will decrease the MPB of consuming fuel powered cars from  $MPB_0$  to  $MPB_1$ . The allocative efficient consumption level  $Q_s$  is achieved and the deadweight loss is eliminated.

When fewer fuel powered cars are consumed, pollution and congestion problem would be reduced.



Another factor that the Chinese government needs to consider will be the benefits from the production of electric cars such as achieving economic growth. As mentioned in Extract 3, "China has a fledgling, but ambitious, automobile industry. It has never been able to match the efficiency and quality of established automakers at making fuel-powered cars, but electric cars are easier to build, giving Chinese firms a new opportunity to compete". This means that China now has a comparative advantage in the production of electric cars which would lead to its export of electric cars to be cheaper. Hence, increasing DD for China made electric cars which would increase export revenue. With increasing export revenue, net exports will increase, ceteris paribus. Thus, aggregate demand will increase, leading to multiplied increase in real national income, hence achieving actual growth. With an increase in actual growth, production of goods and services increase which would lead to increase in demand for labour as it is in derived demand hence increasing employment. Increased employment would result in increased disposable income, purchasing power and hence increased consumption which would further fuel actual growth in the economy.

### 3. Costs

Another factor that the Chinese government would need to consider is the opportunity cost incurred. If the government subsidises the production of electric cars, it would put a strain on the government's budget and also

	<p>less budget available for other areas such as education, healthcare etc... hence reducing the efficiency in these markets.</p> <p>4. <u>Information</u> Effectiveness of the subsidy depends on the accurate evaluation of MEB at Qs, which in reality, will be impossible to assess for different individuals under different contexts.</p> <p>Reliability of data will also be a problem. Accurate information pertaining to costs / benefits of implementation will also aid in the decision-making process.</p> <p>5. <u>Intended and unintended consequences</u> In making a decision, the Chinese government hopes for intended consequences in subsidising the production of electric cars based on their cost and benefits. However if the intended consequence is not satisfactory, the Chinese government may need to change its decision. For example, it was mentioned in Extract 5, "that use of electric cars, which are cheaper to run than fuel-powered cars, has the potential to increase car use and therefore would lead to more congestion and a more unhealthy society with greater prevalence of obesity". Thus, the Chinese government now faces an unintended consequence of subsidising the production of electric cars.</p> <p>Another unintended consequence faced by the Chinese government was the poor quality of the electric cars being produced as mentioned in Extract 4. The poor quality of the electric cars could have arose due to negligence in quality control as firms are rushing to complete the production of the cars. In addition, the subsidies given by the government could have caused the firms to be complacent since they have a cost advantage over other countries hence resulted in the firms to be productively inefficient and neglect the aspect of quality in their cars.</p> <p>Another unintended consequence faced could be the rise in structural unemployment given that the Chinese government is making a huge move towards the production of electric cars which might create skills mismatch between the skill sets of the current workers and the new industry.</p> <p>6. <u>Perspectives of relevant stakeholders</u> Another factor that the Chinese government needs to consider will be the perspectives of others such as consumers who are uncertain about the performance and reliability of electric cars hence not wanting to switch to electric cars but might end up paying more for fuel powered cars given that the price of electric cars are lowered significantly to encourage more people to make the switch. This would increase their cost of living and hence lower their standard of living.</p> <p>The Chinese government also needs to consider the perspectives of the fuel powered car manufacturers who might face a decrease in demand for their products given the lower price of electric cars which lowers their revenue and hence profits. This might result in some retrenchments and loss of income for some of the workers which lowers their SOL.</p>	
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**Conclusion**

In conclusion, the Chinese government makes decisions by considering the factors that affect its costs and benefits and then weigh MSB and MSC to allocate resources to maximise social welfare.

The most significant factor that the Chinese government needs to consider would be the unintended consequences that might arise from subsidising the production of electric cars. If these unintended consequences were not looked into carefully and the Chinese government goes ahead with subsidising the production of electric cars, the consequences could be dire as poor quality of the electric cars would affect China's reputation as a trusted exporter of electric cars and also diminishes domestic consumers' confidence in the product. The rise of structural unemployment would cause a decrease in disposable income, purchasing power and hence reduction in consumption. This would cause AD to fall which result in a fall in RNY; causing further unemployment.

It is essential that the Chinese government considers several strategies to be put in place in anticipation of these unintended consequences such as retraining / reskilling programmes which will help address the issue of skill mismatch when the country moves towards production of electric cars, quality control measures for all producers of electric cars to adhere to.

Level	Descriptors	Marks
L3	Well-developed analysis of costs and benefits of subsidy <b>and 2 other points of view</b> aimed in the decision-making process, with clear well-explained diagrams.  Shows good understanding of the policies, and able to apply relevant advantages and disadvantages.  Good use of case evidence.	6-9
L2	An answer that explains the costs and benefits of subsidy and <b>at least one other point of view</b> in the decision-making process.  However, policy on subsidy may be under developed and not linked to how <b>the market failure</b> is corrected. Some use of case evidence.	3-5
L1	Smattering of valid points or mere explanation of how 1 point of view in the decision-making process corrects the market failure <b>without use of case evidence.</b>	1-2

		EV	Stand with economic justification. This should focus on the weighing of various points of views in arriving at the most optimal decision by the government.	Up to 3 marks	
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Question 2

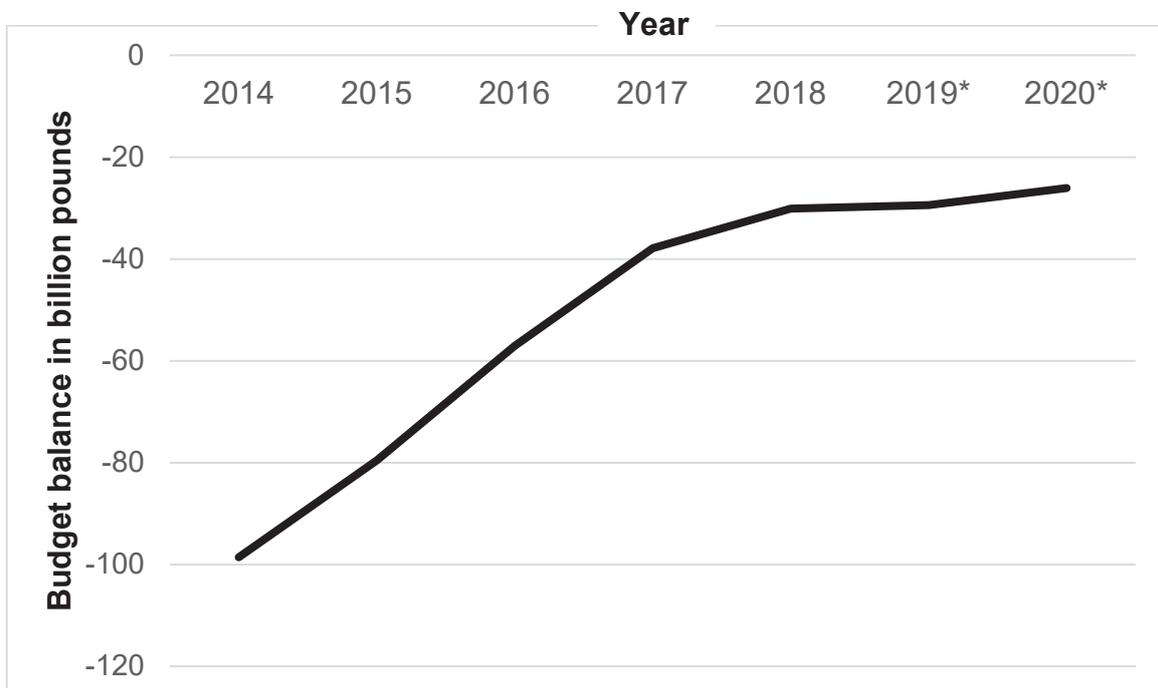
Raising Standard of Living

Figure 2: Annual inflation rate vs average regular pay growth in the UK



Source: Atlas, accessed 26 July 2019

Figure 3: UK government budget balance from 2014 to 2020 (in billion pounds)



Source: Statista, accessed 26 July 2019

### **Extract 6: Living standards in UK fall for the first time since 2014**

UK consumers are suffering a sustained fall in living standards as real pay fell again in the three months to May, piling more pressure on cash-strapped households. This shrinks family incomes and signalling a weaker outlook for consumer spending.

Frances O'Grady, said the government must intervene to address the pay squeeze. "Three months of falling pay is three months too many. The clock is ticking while workers wait for the government to act," she said.

"Ministers must set out a plan to get real wages rising across the public and the private sectors. They should start by scrapping the unfair pay restrictions on nurses, midwives and other public sector workers. And the minimum wage must be raised to £10 as quickly as possible."

Damian Hinds, the employment minister, focused on the strong employment figures, describing them as "another reminder that our strong economy is giving record numbers of people the chance to find and stay in work". Before inflation, regular pay growth excluding bonuses picked up slightly to 2% year on year in the three months to May, from 1.8% in the three months to April.

However, that was still well below inflation, which hit a four-year high of 2.9% in May. Inflation has risen rapidly since the Brexit vote last June triggered a sharp drop in the value of the pound.

John Hawksworth, chief economist at PwC, said that "Real earnings growth remains deep in negative territory and this seems unlikely to change any time soon. This will dampen consumer spending power, though the continued strength of the jobs market should prevent the recent slowdown in the economy turning into a recession."

Ian Kernohan, an economist at Royal London Asset Management, said that inflation is now above the Bank's target level of 2% and real earnings growth has slipped into negative territory.

"This is having a negative impact on household spending. With uncertainty gathering over the Brexit negotiations, the Bank of England's monetary policy committee would need to see a distinct improvement in earnings growth towards 3% and above, to be in a position to raise interest rates."

Source: *The Guardian*, 12 July 2017

### **Extract 7: The falling pace of standard of living in Hong Kong**

On January 16, state-run media gleefully announced that Shenzhen last year had surpassed Hong Kong's economic output to hit 2.2 trillion yuan (US\$338 billion) on the back of 8.8 per cent growth.

However, analysts said that using GDP alone to compare the cities would be inadequate, with GDP per capita – output divided by population – a better indication of standard of living.

Using this measure, Hong Kong, at US\$44,000, was doing better than Shenzhen (US\$25,000) and Guangzhou (US\$21,000), Ayesha Macpherson Lau, managing partner of professional services firm KPMG's Hong Kong office, pointed out.

"Hong Kong has the highest standard of living and is still way ahead," she said.

But lawmakers and entrepreneurs looking to the future said that with neighbouring cities catching up, Hong Kong needed to hustle to maintain its standing as a competitive and vibrant economy. So what could it do to achieve this and even leapfrog the competition?

Shenzhen's manic pace of growth in the last decade was fuelled by an abundance of labour and capital invested in R&D and innovation. In contrast, Hong Kong spent the same period grappling with a tourism downturn, political upheaval and skyrocketing property prices. It also stubbornly remained reliant on its traditional pillar industries – retail, property, financial services and shipping – and fell behind neighbours such as Japan, South Korea and Singapore when it came to investing in R&D, fostering innovation and nurturing home-grown talent.

“Hong Kong is already a very mature and efficient economy. If it wants to have higher economic growth, it must increase inputs, which are capital, labour and efficiency,” Chinese University of Hong Kong economics professor Terence Chong Tai-leung said, adding that as an international financial centre, capital was not a problem.

Source: *South China Morning Post*, 28 January 2018

### **Extract 8: Sustaining standard of living using the ‘human capital project’**

Three years ago the world lined up behind an ambitious set of targets – the sustainable development goals – for 2030. The checklist included the eradication of extreme poverty, ending preventable child deaths and delivering quality universal education. As part of the pledge, governments committed to achieving the most rapid progress among populations left furthest behind.

Extreme poverty has fallen dramatically and child deaths have halved. Yet the pace of global poverty reduction is slowing and the number of extreme poor in Africa is still rising.

The World Bank is using this year's International Monetary Fund/World Bank annual meeting to launch a “human capital project”. The aim is to fundamentally reconfigure how governments view investment. The World Bank's president, Jim Kim, will warn the Bali meeting that short-sighted approaches to economic growth are skewing towards economic infrastructure – such as new roads and bridges – and away from human capital investments in the health, education and nutrition of people. Underinvestment in human capital is not just catastrophic for the 2030 goals, but also bad for economic growth. Sustainable economic development requires both.

Inequality is at the heart of this shortfall. Poverty is falling too slowly, in part because the benefits of growth in Africa and elsewhere are skewed towards the wealthy. Child mortality is coming down, but death rates among the poorest children in many countries are still two to three times higher than those for the richest. Girls, children with disabilities and minority groups are also left behind. Social disparities are declining at a glacial pace, not least because governments have failed to act on a commitment to invest in truly universal health coverage.

Tackling the power relationships behind these inequalities will take more than policy pronouncements. Countries such as India and Nigeria are spending less than 1% of national income on health, effectively denying their citizens access to care – and consigning children to early graves. Like many of the governments it will justifiably criticise, the World Bank itself has been underinvesting in education.

Source: *The Guardian*, 9 October 2018

## Questions

(a)	(i)	State two main components of a government's budget.	[2]
		- Government expenditure [1m] - Government revenue [1m]	
	(ii)	Using Figure 3, describe the trend in the government budget balance in UK between 2014 and 2018.	[2]
		- Government budget <b>deficit</b> [1m] - <b>Improving</b> government budget [1m]  OR - The government budget <b>deficit</b> has been <b>improving</b> between 2014 and 2018 [2m]	[2]
(b)		Using Figure 2, explain how the data might be used to estimate changes in the average standard of living in the UK over this period.	[3]
		-Average SOL involves Material and Non-material SOL. - Material SOL = Availability of goods and services to each citizen [1m] - When growth rate of regular wage is higher than inflation rate in the UK between 2014 and 2017, this implies that the <b>real pay</b> is positive (i.e. rate of increase in regular pay is greater than the rate of increase in consumer price level). [1m] Thus, average households in the UK have higher <b>purchasing power</b> to buy more goods and services and thus the average <b>material</b> standard of living in the UK is higher. [1m]	
(c)		Use the concept of opportunity cost to explain one effect on each of households and the government arising from the fall in real pay as described in Extract 6.	[4]
		Define opportunity cost. Opportunity cost refers to the <u>net benefit</u> that could have been derived from the next-best alternative forgone as a result of a decision made.  Effect on Households With reference to the households, for example, the fall in real pay forces households to choose how they would spend their income. If they decided to maintain spending on necessities, for example, the opportunity cost would be the cut in spending that would have to be sacrificed, such as on <b>luxuries</b> like the use of private transport or dinner at a restaurant. [2m]  Effect on Government With reference to the government, for example, the declining pay of households would result in declining tax revenues and this might well force governments to choose how they would spend these revenues. If they decided to spend on infrastructure, for example, the opportunity cost would be other potential areas of government spending that would have to be sacrificed, such as welfare programmes or defence. [2m]  <i>For both households and governments, students need to be clear that changes in resources, initiates the need to make choices and once a choice is made, an alternative choice needs to be forgone!</i>	

(d)	With reference to Extract 6 and using an AD/AS diagram, explain how the suggestion of raising the minimum wage “to £10 as quickly as possible” is likely to impact UK’s economic growth.	[6]
	<p>Min wage “to £10 as quickly as possible” would ensure that all UK workers would earn at least £10. This would likely to increase the <b>cost of production</b> of firms in UK and thus decreases profits. This would result in SRAS to fall from AS0 to AS1. [2m]</p> <p>At the same time, this would lift up the real wage of low income workers, ceteris paribus. This would <b>increase their purchasing power</b> and thus increase consumption expenditure. AD would increase from AD0 to AD1. [2m]</p> <p><b>Well labelled AD – AS diagram</b> with relevant shifts of the curves [1m]</p> <p>Assuming that fall in AS is greater than rise in AD, real national income would fall and thus reduce UK’s economic growth from Y0 to Y1. [1m]</p> <p><u>Max of 4 marks</u> if students only see minimum wage as either an AD <b>or</b> AS factor. Students would need to provide more details to justify the 4 marks.</p>	
(e)	Explain how Shenzhen was able to fuel its ‘manic pace of growth in the last decade’ (Extract 7) and comment on whether Hong Kong should adopt this approach to boost its GDP growth rates.	[7]
	<p>Extract 7: Shenzhen’s manic pace of growth in the last decade was fuelled by an abundance of labour and capital invested in R&amp;D and innovation.</p> <p>Abundance of capital invested in R&amp;D would <b>increase investment expenditure</b> of Shenzhen and thus increase AD (use diagram). This would lead to economic growth in Shenzhen. [2m]</p> <p>In the long run, there would be an <b>increase in quality of capital</b> which would result in a <b>rise in the productive capacity</b>. Thus, there would be an increase in AS (use diagram). The combined increase in AD and AS would translate to the <b>manic</b> pace of growth. [2m]</p> <p><b>Final 3 marks</b> are reserved for valid and relevant ‘comment’ where it would encompass at least 2 <i>well – made</i> and <i>well – considered</i> evaluative points.</p> <p><b>Possible Considerations:</b></p> <ul style="list-style-type: none"> <li>• Hong Kong should consider following Shenzhen: ‘Hong Kong is already a very mature and efficient economy. If it wants to have higher economic growth, it must increase inputs, which are capital, labour and efficiency’ [Extract 7]</li> <li>• Hong Kong may have constraints in raising quantity of inputs such as labour as it is already very densely populated.</li> <li>• Raising the level of investment and moving away from its traditional sectors may lead to structural unemployment which Hong Kong may not be willing to sacrifice.</li> </ul>	

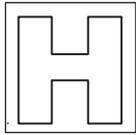
(f)	<p>Extract 8 suggests that economies should skew away from investments in economic infrastructure to human capital project to aim for sustainable economic development.</p> <p>Assess whether the human capital project is always a better approach for economies such as Africa to achieve sustainable economic development.</p>	[9]
	<p>Introduction Economies such as Africa has low literacy rates, large pool of unskilled labour and a high level of poverty (Number of extreme poor in Africa is still rising)</p> <p>Body The human capital project concerns the increase in human capital investments in areas of health, education and nutrition The human capital project would benefit Africa and poor and unskilled Africans :</p> <ul style="list-style-type: none"> <li>- Raises the education and health of labour which enables economic growth. Government expenditure on health, education and nutrition raises AD and hence generates economic growth.</li> <li>- This also helps to raise the productivity of labour and thus quality of labour. Productive capacity would increase and thus LRAS with the human capital project. With the corresponding increase in AD and AS, Africa would experience sustainable economic growth given that such approach could maintain a growth rate without creating significant economic problems for future generations such as depleting resources and environmental problems.</li> <li>- Since investments are in health, education and nutrition, it will help Africans raise their productivity and hence lead them to earn higher wages. (Draw labour market with rising demand for labour and hence wages.) As wages for the poor Africans who had low skills grow, the growth becomes inclusive and it narrows the income gap. This helps achieve higher GDP with lower Gini coefficient values.</li> <li>- The expenditure towards health will also raise the living standards of Africa where the 'death rates are among the poorest children' are three time more than those for the richest'. In addition governments are spending less than 1% of national income on health , which 'effectively denying their citizen access to care'</li> </ul> <p>Possible Limitations of the human capital project</p> <ul style="list-style-type: none"> <li>- Providing education and nutrition as well as healthcare does not guarantee a quick rise in productivity. Having low literacy rates, it may be a challenge to provide education and expect to see a quick rise in productivity. It also depends on the attitude and mindset of those receiving education.</li> <li>- While receiving education, the African may cut down on their hours work. This can raise the cost of production of firms.</li> </ul> <p>Investment in economic infrastructure has more certain outcomes on economic growth. As such investments increase, AD rises in the short run followed by increased LRAS. This leads to higher and more sustained GDP. The higher GDP would unlikely be more even distributed as compared to the human capital project. Currently, the investments in infrastructure, 'are skewed towards the wealthy'.</p>	

	<p>In addition, the investment on infrastructure does not immediately lead to higher SOL for Africans as capital instead of consumer goods are produced. In addition, more production of capital goods also leads to more pollution in Africa.</p> <p>Conclusion The human capital project is likely to be a better approach as it would benefit the Africans more than spending on infrastructure. It is most needed in Africa where, there is an under expenditure on healthcare and where 'social disparities are declining at a glacial pace'. However, the move towards the human capital project may come at a huge price of lower and more uncertain economic growth. Its benefits may surface only in the very long run.</p> <table border="1"> <thead> <tr> <th colspan="3">Knowledge, Understanding, Application and Analysis</th> </tr> </thead> <tbody> <tr> <td>L2</td> <td>An answer that explains the benefits and costs of the human capital project as well as the traditional investments on infrastructure <b>thoroughly</b> using <b>economic framework</b>.</td> <td>4 – 6</td> </tr> <tr> <td>L1</td> <td>An answer that vaguely <b>describes</b> the two forms of investments without the use of economic framework.</td> <td>1 – 3</td> </tr> <tr> <td>E</td> <td>Provides a comparison as well as a takes a stand on which approach for investments is better.</td> <td>1 – 3</td> </tr> </tbody> </table>	Knowledge, Understanding, Application and Analysis			L2	An answer that explains the benefits and costs of the human capital project as well as the traditional investments on infrastructure <b>thoroughly</b> using <b>economic framework</b> .	4 – 6	L1	An answer that vaguely <b>describes</b> the two forms of investments without the use of economic framework.	1 – 3	E	Provides a comparison as well as a takes a stand on which approach for investments is better.	1 – 3	
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(g)	<p>In light of rising inflation rates, discuss the view that increasing interest rate is the best policy option for the UK government to raise real pay.</p>	[12]												
	<p>Introduction Real pay is falling due mainly to the rising inflation rates. This is seen from figure 2 from 2017. It is also mentioned in Extract 6 that 'before inflation', regular pay picked up by 2%. Inflation hit a high of 2.9% and has risen rapidly.</p> <p>Body Explain how increasing interest rate is a possible policy option to <b>reduce inflation rate</b>.</p> <ul style="list-style-type: none"> <li>- Explain how rising i/r would reduce C and I in the UK (need to explain)</li> <li>- Use diagram to show that AD will fall and hence lead to a fall in GPL. Given that the <b>regular</b> pay growth is higher than the inflation rate, this would <b>cause a rise in</b> real pay in the UK.</li> </ul> <p>Possible Limitations</p> <ul style="list-style-type: none"> <li>- <b>As AD falls, real GDP</b> also falls and hence that will lead to a fall in <b>the demand</b> for labour since labour is a derived demand and falling <b>production</b> of goods will lead to falling demand for labour.</li> <li>- <b>Falling</b> labour demand leads to falling wages and hence so long as wages fall more than the fall in GPL, real pay would fall. This is supported by Extract 6 where "With uncertainty gathering over the Brexit negotiations, the Bank of England's monetary policy committee would need to see a distinct improvement in earnings</li> </ul>													

	<p>growth towards 3% and above, to be in a position to raise interest rates.”</p> <p>Provide an alternative policy that can <b>raise regular pay</b> as well as lower GPL.</p> <p>E.g. Policies that <b>increase wages</b> through raising productivity of labour</p> <ul style="list-style-type: none"> <li>- Long Run Supply side policies that can help raise labour productivity such as investing on R&amp;D and innovation just like what Shenzhen did (Extract 7) to increase quality of labour.</li> <li>- An increase in labour productivity leads to a rise in the demand for labour and hence raises regular pay.</li> <li>- At the same time, the labour productivity growth would lead to a rise in quality of labour and thus productive capacity. This would increase the LRAS and lead to a reduction in GPL and thus inflation rate.</li> <li>- Both the reduction in inflation rate and the rise in wages would lead to a sustained increase in real pay.</li> </ul> <p>Possible Limitations</p> <ul style="list-style-type: none"> <li>- The initial push towards skills upgrading could lead to a rise in AD and may lead to rising inflation rate, which will cause the fall in real pay in UK.</li> <li>- Drain on government's budget would likely to result in higher opportunity cost on UK government given that UK faces government budget deficit in Figure 3 as UK government may end up borrowing to finance the skills upgrading.</li> </ul> <p>E.g. Short Run Supply Side Policies that lower cost of production.</p> <ul style="list-style-type: none"> <li>- Wage subsidies can be used to lower production cost.</li> <li>- This raises the AS (<math>Y_f</math> unchanged) and leads to lower GPL (draw). The lower GPL reduces inflation rate and thus raises the real pay.</li> <li>- At the same time, as AS rises, GDP rises. As labour is in derived demand, this will lead to an increase in demand for labour (draw). As labour demand rises, wage rises and real pay rises.</li> </ul> <p>Limitation</p> <ul style="list-style-type: none"> <li>- Drain on government's budget would likely to result in higher opportunity cost on UK government given that UK faces government budget deficit in Figure 3 as UK government may end up resorting to austerity measures and lead to a fall in AD and hence GDP, this may lead to falling real pay.</li> </ul> <p>Conclusion</p> <p>Increasing <b>interest rate</b> is <b>unlikely</b> to be the best policy option for the UK government to <b>raise real pay</b> since it would lead to falling demand for labour and hence <b>falling regular pay</b>. So long as the fall in regular pay is more than the <b>fall in prices</b>, households are worse off. Hence, a long run supply side policy <b>would seem</b> to be a better option than to raise interest rates since supply side policies lowers GPL, leading to rising real pay especially in the light of expected improving government budget deficit in the UK as seen in Figure 3.</p>	
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<b>Knowledge, Understanding, Application and Analysis</b>		
L3	An answer that explains the benefits and costs of increasing interest rates as well as an alternative policy in raising real pay <b>thoroughly</b> using <b>economic framework</b> .	6 – 9
L2	An answer that explains the benefits and costs of increasing interest rates to address falling real pay <b>thoroughly</b> using <b>economic framework OR descriptive</b> approach covering rising interest rates and an alternative policy that can help address falling real pay.	3 – 5
L1	A <b>vague, descriptive</b> or list-like answer that explains the impact of rising interest rates on real pay.	1 – 2
E	Answer that compares rising interest rates and an alternative policy and judges whether raising interest rates is the best.	2-3
	Unexplained judgement on whether raising interest rates is the best.	1
[Total: 45 marks]		





National Junior College  
SH2 Preliminary Examinations for General Certificate of Education Advanced Level  
Higher 1

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## ECONOMICS

**8823/01**

Paper 1

**2 September 2019**

**3 hours**

Additional Materials: Answer Booklet

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### READ THESE INSTRUCTIONS FIRST

Write down all the necessary information on the front page of the answer booklet.

Write in dark blue or black pen.

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

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

DO **NOT** WRITE IN ANY OF THE MARGINS.

Answer **all** questions.

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

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

Answer **all** questions.

### Question 1: Climate Change

**Figure 1: Food Price Index**



Source: *Food and Agriculture Organisation*

#### **Extract 1: Global food prices continue to fall despite climate concerns**

When El Niño wreaked havoc on the world's population during 2015, causing floods in Southeast Asia and rains in Brazil, it also damaged crops, especially sugar and palm oil. In October, prices shot up, particularly for sugar. However, the rise was a rare exception – international prices for most foods, including sugar and dairy, have been falling for the past four years.

Meanwhile, the Food and Agricultural Organisation (FAO) continues to stress that food security remains a great concern. People in some 33 countries, with the majority in Africa, may face food shortages. Instead of producing crops for food, farmers produce fuel from crops like corn in the United States (US) due to heavy government subsidies. The International Energy Agency estimates that global production of biofuels met about one third of the 900,000-barrel-per-day increase in worldwide demand for oil. The Gates Foundation, founded by Bill Gates, recently announced \$306 million in subsidies to boost agricultural yields in the developing world, with nearly \$165 million to replenish depleted soils in Africa and to equip and train farmers. Numerous countries, from Argentina to Russia, have erected minimum price levels on exports to try to shore up domestic food supply.

Source: Adapted from *Financial Times*, 14 January 2016

#### **Extract 2: Global food prices around two-year high as meat, dairy and wheat prices climb**

International food prices soared to around two-year highs during June, fueled by higher prices for wheat, meats and dairy products such as butter. Analysts say stronger global demand for

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meat is helping to keep prices strong. Beef is one of the fastest-growing meat categories in Asia, and the US last month returned to shipping supplies to the Chinese market for the first time in 13 years. The opening of US beef sales to China could make it a multibillion-dollar market to American producers within a few years. Beef demand in China has grown due to a rise in household incomes and a taste for more Western foods.

In the US market, the barbecue-grilling season has helped spur demand and helped support recent prices for meats. "Supplies still appear ample to meet demand and that is probably going to lead to moderation in prices." said Bill Lapp, president at Advanced Economic Solutions in Omaha.

Source: *CNBC*, 6 July 2017

### **Extract 3: Food and farming policies 'need total rethink'**

A big meeting in London will look at how reforms could help halt species extinction and meet climate goals. The campaigning organisation, Compassion in World Farming (CiWF) warns that "there will be catastrophic impacts for life on Earth unless there is a global move away from intensive farming".

Farming contributes to climate change through the release of methane (a major greenhouse gas) from the production of livestock animals. The aim would be to properly integrate objectives such as food security, climate change, animal welfare and human health – so one is not pursued at the expense of the other.

Source: *BBC News*, 5 October 2017

### **Extract 4: Singapore to impose carbon pricing in move to cut greenhouse emissions**

Carbon pricing such as a carbon tax could be based on average emissions for production of an item. "A carbon price would send appropriate price signals to encourage changes in energy consumption, provide market incentives for the adoption of energy-efficient technologies and low-carbon solutions, and stimulate growth in green industries. But a carbon price will incur costs, including affecting Singapore's competitiveness. Its overall impact will have to be studied." said National Climate Change Secretariat.

The petroleum refining, chemicals and semiconductor sectors made up the bulk of greenhouse emissions in Singapore. Shell, together with five other European oil majors such as BP and Statoil, said they would discourage high-carbon options and help to stimulate investments in the right low-carbon technologies. ExxonMobil has said that it is supportive of a carbon tax.

Source: *The Straits Times*, 17 February 2017

### **Extract 5: China unveils an ambitious plan to curb climate change emissions**

China released plans to start a giant market to trade credits for the right to emit planet-warming greenhouse gases. The nationwide market would initially cover China's vast, state-dominated power generation sector. China's announcement could also disappoint those who were hoping the long-promised emissions market would cover the country's broader economy. China's booming car culture, its industrialising agriculture sector and its huge chemical complexes, cement factories and steel mills are also big emitters.

Under emission markets, power companies and others effectively pay the right to pollute beyond a government-mandated limit. Those that cut their emissions could sell permits to pollute to dirtier companies, ideally at a healthy price. So far, such efforts have been underwhelming. Markets in Europe and at the provincial level in China have faltered because the authorities issued too many credits to existing polluters. That gave companies little reason to buy credits, or to cut their own emissions and sell the credits. China was likely to issue many credits starting early next year in response to domestic political pressures, and then gradually tighten annual allocations to force up the price.

Having them trade with each other might help the central government figure out more rules to regulate trading in less regulated sectors, and also to identify which companies are the most efficient at reducing emissions. Kelly Sims Gallagher, a professor of environmental policy at Tufts University, said the Chinese government was right to be cautious by starting with just the electricity sector. "It's important to realise you can't do that overnight," Ms. Gallagher said.

Source: *New York Times*, 19 December 2017

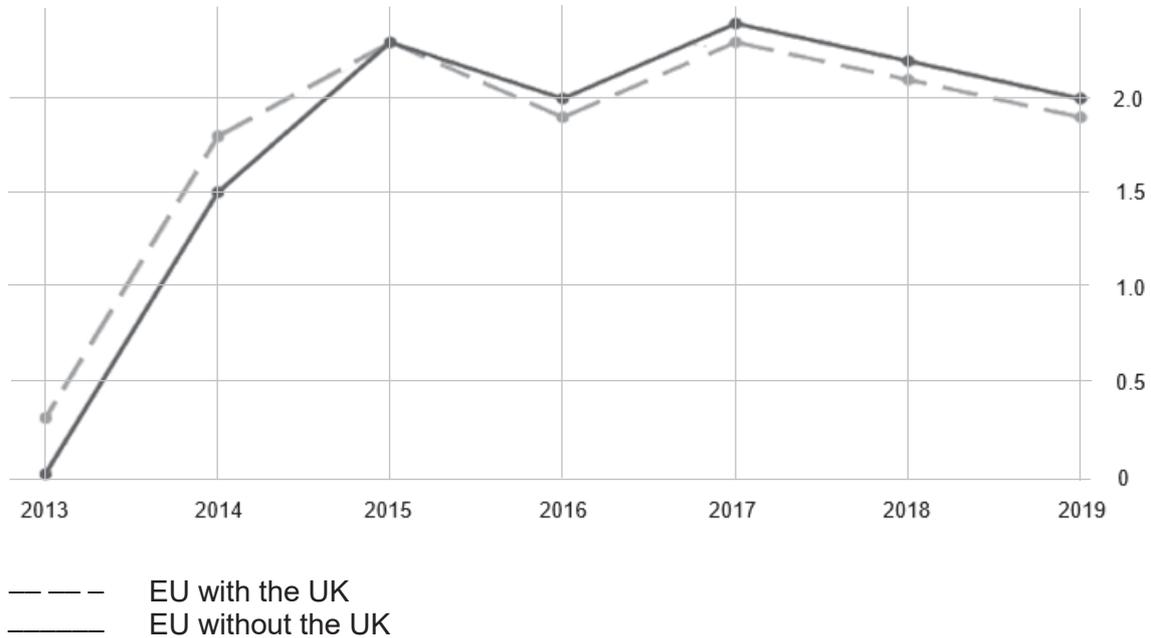
### Questions

- (a) Using Figure 1, describe the trend of global food prices during the period 2014–2017. [1]
- (b) With reference to Extract 1:
- (i) Explain how the heavy government subsidies in the production of crops for biofuel affects the market for crops for food in the US. [4]
- (ii) Explain the assertion that the impact of El Nino has caused the prices of crops to shoot up. [2]
- (c) Using **two** demand factors and a relevant elasticity concept, explain the "moderation in beef prices" (Extract 2). [6]
- (d) With the aid of a diagram, explain why the market might fail in the case of intensive farming. [5]
- (e) Explain and comment on the view that the implementation of a carbon tax will incur costs, including affecting Singapore's competitiveness. [8]
- (f) Explain and evaluate the effectiveness of carbon emission-trading scheme in reducing rising greenhouse emissions in China. [7]
- (g) Discuss whether a provision of subsidies to boost agricultural yields in the developing world is the best policy to overcome food shortages. [12]

[Total: 45]

## Question 2: Brexit and the European economy

Figure 2: Economic growth rate in the United Kingdom (UK) and European Union (EU)



Source: *Financial Times*

### Extract 6: Austerity has strangled Britain

In a statement, the Office of Budget Responsibility (OBR) said it expects growth to slow "as public spending cuts intensify and Brexit-related uncertainty continues to bear down on activity."

Since the eurozone crisis, many governments have turned to austerity. Across Europe, and in Britain, they have tried frantically to cut their spending, to repay debts as a result of the crisis. Austerity has not only damaged the European economies, but threatens future growth. There is a long list of investments that governments should be making, such as strengthening infrastructure, transport and communications, investment in education and in families.

In this election, it is the Labour party that is advocating the kind of economic plan that is right for the UK. The party proposes to finance its plans on carefully thought-out proposals based on taxing the higher-income group and ensuring that corporations pay what they should. The evidence shows that these actions will not slow down growth but will help strengthen the UK economy.

Source: *The Guardian*, 7 June 2017

### Extract 7: UK economy lags behind G7 after 2017 growth rate cut

Gross Domestic Product (GDP) growth slowed to a quarterly 0.4% from a previous estimate of 0.5%, wrong-footing economists and reducing 2017 growth as a whole to 1.7%, its lowest since 2012. The downgrade of the full-year and fourth-quarter growth rates raised questions about the strength of the economy as the Bank of England prepares to raise interest rates.

The country has relied heavily on the unexpectedly robust global economy to sustain its economic growth while consumers have been squeezed by higher inflation caused by the fall in the pound after the Brexit vote.

The UK is a net importer of energy, meaning the fall in the value of the pound makes commodity purchases more expensive. In February, the UK's inflation rate jumped to 2.3%, its highest level since September 2013, on the back of higher fuel costs, especially transport fuels. The retail petrol prices have been increasing, off the back of the OPEC and non-OPEC pact from November 2016 to cut back crude oil production.

Despite a possible boost to manufacturing exports, the depreciation of the pound since the Brexit vote must reflect expectations of slower growth for the UK economy in the next few years and beyond. The latest GDP data suggest that the economy remains in a fragile state and does not need to be cooled with another rate rise as soon as May.

Source: Adapted from *Reuters*, 22 February 2018

### **Extract 8: UK wage growth picks up as unemployment rate falls again**

UK wage growth has started to edge up amid signs that the lowest level of unemployment since the mid-1970s may be increasing workers' bargaining power, which can be attributed to the robust global economy. But despite the additional jobs and the acceleration in wage growth, living standards remain under pressure because wages have failed to keep pace with inflation, which stood at 2.6% in June.

A tighter labour market is seen as strengthening the hand of the Bank of England's monetary policy committee, who are pressing for an increase in interest rates. The availability of jobs in the UK continues to attract workers from overseas, but the rate of increase had slowed over the past year.

Source: *The Guardian*, 16 August 2017

### **Extract 9: Germany's biggest Brexit boon**

The biggest economy in Europe is a ticking demographic time bomb. The number of Germans approaching retirement is growing strongly. The inevitable result of buoyant businesses and retiring baby boomers will be a growing shortage of skilled workers. Almost 20% of German firms also said that a shortage of labor is currently limiting their production – the highest value ever recorded. Job openings have been difficult to fill in some professions, such as in engineering, software and health care. Companies can try to attract migrants to fill the jobs.

During the eurozone crisis, Britain benefitted from a surge of young and well-educated European workers who were struggling to find jobs. But after last year's Brexit referendum, net migration of EU citizens to Britain fell sharply.

With Germany's comparatively old population, retiring baby boomers, growing economy and reasonably flexible labour market and immigration conditions, it has the most to gain as Brexit changes the patterns of migration within the EU.

Source: *Centre for European Reform*, 11 December 2017

### Extract 10: Brexit will hit Germany's car industry

Economists say a combination of tariffs and new regulations would result in fewer sales for German businesses, especially for its £26 billion car industry.

If the UK leaves the EU without a trade agreement in place, it will fall back on the World Trade Organisation rules to deal with other countries. The UK will be treated as a "third country" – alongside the United States, Japan and Australia – which carries a strict set of quality regulations and customs duties. This would mean the EU's standard export tariff of 10% would probably be applied to German car manufacturers.

Source: *Express*, 1 November 2017

### Questions

- (a) Using the data in Figure 2, compare the economic growth rate in the EU with the UK and EU without the UK over the period 2015–2019. [2]
- (b) Explain how government spending can boost the UK economy and comment on the appropriateness of taxing the higher-income group and the corporations to finance the government spending. [6]
- (c) With reference to Extract 7:
- (i) With the aid of a diagram, explain the effect of the cutback in crude oil production on inflation in the UK. [5]
- (ii) Assess the validity of the view that the UK economy 'does not need to be cooled with another rate rise'. [9]
- (d) Explain why living standards in Britain has been under pressure despite the acceleration in wage growth. [3]
- (e) With reference to Extract 10, explain whether consumers or the German car manufacturers are likely to bear a greater burden of the tariffs. [8]
- (f) Discuss the likely impact of Brexit on economic growth in the UK and Germany. [12]

[Total: 45]

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**Question 1****Suggested Answers:**

(a)	Using Figure 1, describe the trend of global food prices during the period 2014-2017. [1] Global food prices decreased from 2014 to 2017. [1]
(b)	With reference to Extract 1:
(i)	Explain how the heavy government subsidies in the production of crops for biofuel affects the market of crops for food in the US. [4]
	<ul style="list-style-type: none"> <li>• Government subsidies in the production of crops for biofuel such as corn will increase the supply of crops for biofuel.</li> <li>• Crops for biofuel and crops for food are substitutes in production.</li> <li>• As more resources are used to produce crops for biofuel, the supply of crop for food decreases.</li> <li>• The fall in supply of crops for food leads to an increase in price and a fall in equilibrium quantity.</li> </ul>
(ii)	Explain the assertion that the impact of El Nino has caused the prices of crops to shoot up. [2]
	<ul style="list-style-type: none"> <li>• The demand for crops is price inelastic due to a high degree of necessity to consume crops as food to survive.</li> <li>• This leads to a more than proportionate increase in the prices of crops, causing the prices of crops to shoot up.</li> </ul>
(c)	Using <b>two</b> demand factors and a relevant elasticity concept, explain the “moderation in beef prices” (Extract 2). [6]
	<ul style="list-style-type: none"> <li>• The two demand factors that caused an increase in demand for beef are changes in taste and preference towards the consumption of beef and also an increase in income.</li> <li>• The increase in demand due to the two factors cause an increase in beef prices.</li> <li>• As mentioned in Extract 2, there is ample supplies of beef. This suggests that there is adequate stock.</li> <li>• This means that the price elasticity of supply of beef is greater than one.</li> <li>• The increase in demand, <b>will bring</b> about a moderation in beef prices.</li> </ul>
(d)	With the aid of a diagram, explain why the market might fail in the case of intensive farming. [5]
	<ul style="list-style-type: none"> <li>• Intensive farming results in climate change. Such third party effects is known as negative externalities which impose an external cost to the society.</li> <li>• This results in a divergence between the marginal private cost (MPC) and the marginal social cost (MSC) of farming.</li> <li>• Referring to Figure 1, the free market equilibrium output is <math>Q_M</math> where the marginal private cost is equal to marginal private benefit (MPC=MPB).</li> </ul>

- The social optimal output is  $Q_S$  where  $MSB=MSC$ . Hence, there is an overproduction of  $Q_S Q_M$  of farmed animals.
- This results in a deadweight loss of area abc.

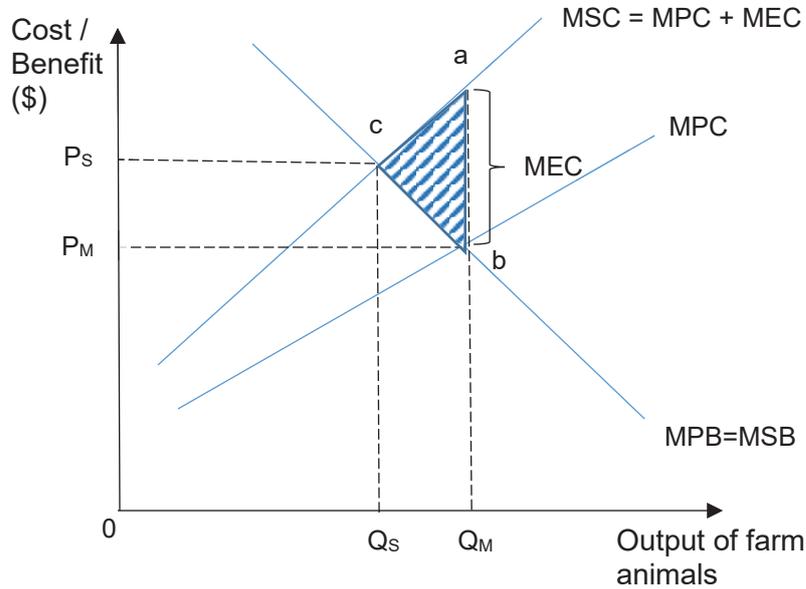


Figure 1: Market for farmed animals

(e) Explain and comment on the view that a carbon tax will incur costs, including affecting Singapore's competitiveness. [8]

Body 1: Explain how a carbon tax affects Singapore's export competitiveness

- The imposition of a carbon tax is considered an indirect tax on the producers. It shifts the supply curve leftward in a parallel manner assuming it is a specific tax.
- The equilibrium price of the good increases from  $P_0$  to  $P_1$ .
- Suppose that good A is one of the goods for exports and the other exports also face an increase in price, it leads to an increase in price of exports in general, which will affect the price competitiveness of exports in the global market.

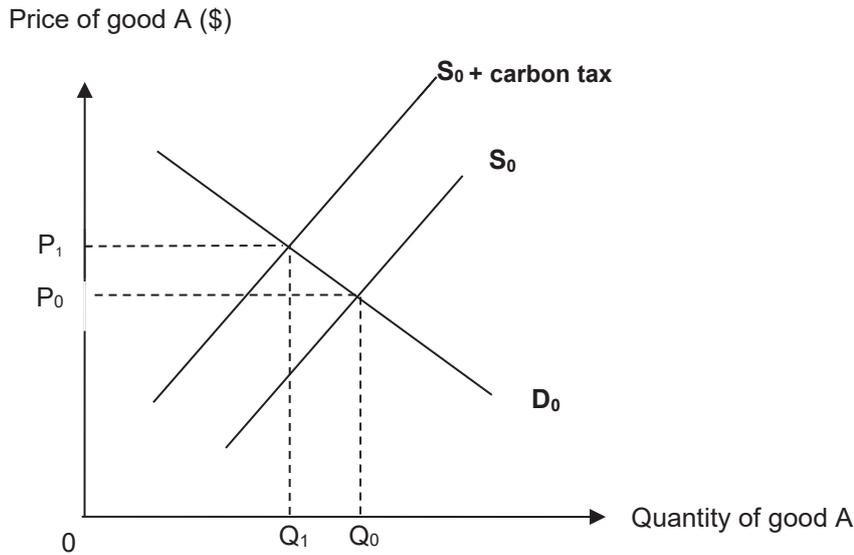


Figure 2: Market for Good A

Body 2: Explain how a carbon tax affect Singapore competitiveness in terms of foreign direct investment

- With an increase in cost of production, foreign investors might be deterred from investing in Singapore in terms of setting up new companies and investing to expand existing companies in Singapore.

Body 3: Comment on how a carbon tax might not affect Singapore's export competitiveness

- More investment could be made in green industries to reduce the level of carbon emissions.
- With the reduction in carbon emissions, these firms that successfully adopt energy efficient technologies would not experience a significant increase in cost of production, thereby reducing the risk of losing export competitiveness due to a price increase.

Body 4: Comment on how a carbon tax might not affect foreign direct investment

- The investment in green industries might attract similar companies from overseas to invest in Singapore due to rising demand for such products and services.
- FDI might increase instead of decrease which means Singapore's competitiveness is unlikely to be negatively impacted.

(f)	Explain and evaluate the effectiveness of carbon emission-trading scheme in reducing rising greenhouse emissions in China. [7]
	<p><u>Introduction:</u></p> <ul style="list-style-type: none"> <li>• China is implementing carbon trading scheme gradually and it is now imposed on state-dominated power generation sector in the short run.</li> </ul>

	<ul style="list-style-type: none"> <li>China has plans to roll out the scheme further to cover more sectors in the long run since the large emitters of greenhouse gases include car, agriculture, chemical, cement and steel industries.</li> </ul> <p><u>Body 1: Explain emission-trading scheme</u></p> <ul style="list-style-type: none"> <li>The system of tradable permits is a combination of command-and-control and market-based system of resolving externalities. Each firm is given a permit to produce a given level of pollution.</li> <li>If the firm produces less pollution than what they are legally permitted to produce, the firm is given a credit. This credit can then be sold to another firm, allowing the other firm to exceed its original limit.</li> <li>The polluting firms internalise the externality of pollution as there is an opportunity cost of polluting.</li> </ul> <p><u>Body 2: Evaluate the effectiveness of carbon emission-trading scheme in reducing rising greenhouse emissions in China</u></p> <ul style="list-style-type: none"> <li>The main advantage of tradable permits is that the government can simply determine the total amount of permitted discharge according to the ability of the environment to absorb the pollutants; it can do this without any knowledge of the specific costs and benefits of individual firms. The market in tradable permits can then allocate the reduction in pollution to where it can achieve at least cost.</li> <li>However, critics have argued that the tradable permits system which gives firms a “right to pollute” is not morally right. Firms which find that the costs of the permits is lower than their abatement costs (costs of eliminating pollution), would buy more permits to pollute. As such, these firms might not have the incentive to reduce pollution.</li> <li>Another issue of this system is deciding how to allocate the permits to firms. If there are many polluting firms, regulators would be concerned about the administrative costs. If there are too many credits, companies have little reason to buy credits, or to cut their own emissions.</li> </ul>
(g)	<p>Discuss whether a provision of subsidies to boost agricultural yields in the developing world is the best policy to overcome food shortages. [12]</p>
	<p><u>Introduction:</u></p> <ul style="list-style-type: none"> <li>The concern on the possibility of facing food shortages in 33 countries have led to non-profit organisations such as the Gates Foundation and governments to react to resolve it.</li> <li>Food shortages occur as quantity demanded outweighs the quantity supplied at the original price levels.</li> <li>According to Extract 1, a provision of subsidies to boost agricultural yields in the developing world include both funds to replenish soils in Africa as well as to equip and train farmers.</li> </ul> <p><u>Thesis:</u>  <u>Subsidies to replenish soil is effective to overcome food shortages</u></p> <ul style="list-style-type: none"> <li>The provision of subsidies to boost agricultural yields is considered an indirect subsidy paid to the farmers.</li> <li>These subsidies help to reduce the cost of production by providing funds to replenish soils.</li> </ul>

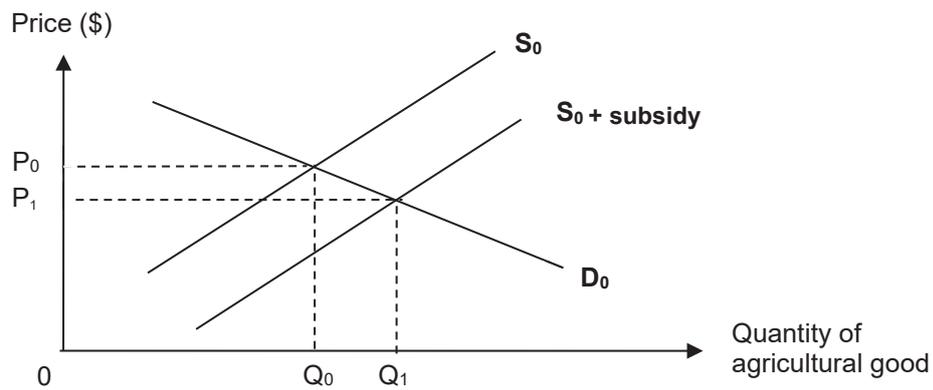


Figure 3: Market for agricultural goods

- With reference to Figure 3 above, the supply curve shifts downwards by the full amount of the indirect subsidy from  $S_0$  to  $S_0 + \text{subsidy}$ .
- The increase in quantity of agricultural goods reduces the food shortage faced by developing countries.

#### Anti-Thesis

##### Limitations of subsidies

- The limitation of using subsidies to resolve food shortages is that it is often difficult to assess the exact amount of subsidies to be provided.
- If the subsidies provided is insufficient due to a lack of funds, then it might only temporarily solve the problem by reducing the price of soil or cost of production.

#### Thesis

##### Subsidies to equip and train farmers is effective to overcome food shortages

- By providing equipment and training to farmers, the cost of production decreases leading to an increase in supply.
- Hence quantity of agricultural goods will increase, reducing food shortages effectively.

#### Anti-Thesis

##### Limitations of equipping and training

- The effectiveness of education on new ways of farming with the help of equipment depends on the **receptiveness** of the farmers and the effect is only seen in the long run.

#### Anti-Thesis

##### Minimum price levels on exports to try to shore up domestic food supply is effective

- In a free market without government intervention, the free market equilibrium price and quantity determined by the free market forces of demand  $D_0$  and supply  $S_0$  would be at  $P_0$  and  $Q_0$  respectively, as shown by Figure 4.

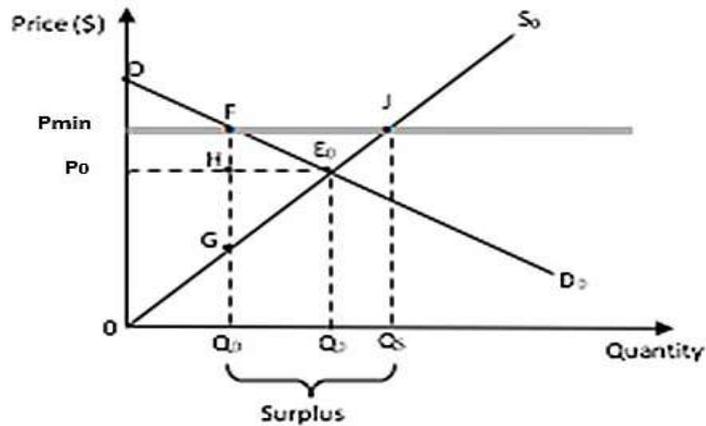


Figure 4: Effects of a Price Floor on exports

- Given that the price floor is set at  $P_{min}$  which is above the free market equilibrium price  $P_0$ , a surplus of  $Q_S Q_D$  exists as the corresponding quantity supplied at  $Q_S$  is larger than the quantity demanded at  $Q_D$  (also the quantity transacted).
- These surpluses are not exported and thus sold in the domestic market, increasing the supply of domestic supply of agricultural goods. The increase in supply will help to alleviate the food shortages.

Overall Evaluation:

- Whether a provision of subsidies to boost agricultural yields in the developing world is the best policy to overcome food shortages depends on time period. (students can compare long run and short run needs)

**Mark Scheme**

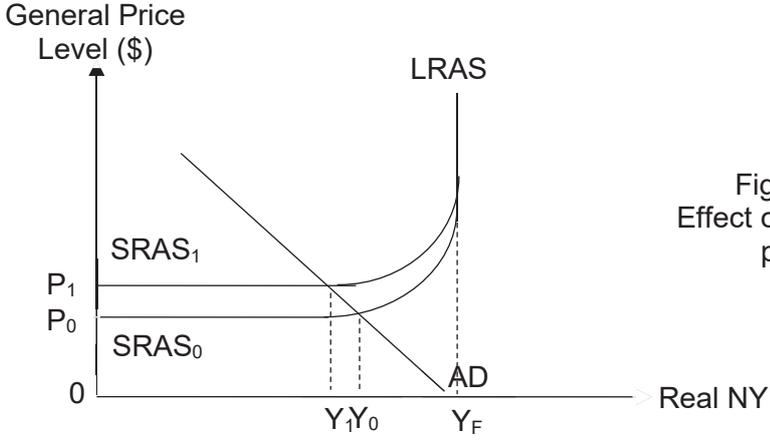
<b>L3 7-9 marks</b>	<p>For an answer that demonstrates knowledge and understanding with excellent application and analysis:</p> <p>Excellent <b>breadth</b> that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of <b>relevance</b> and <b>significance</b> in answering the question.</p> <p>Excellent <b>depth</b> in economic analysis that reflects the following in MOST explanations.  <b>Accurate</b> use of economic concepts, <b>clear</b> elaboration, and <b>precise</b> use of economic terminologies, language and phrasing.</p> <p>The answer should also be supported by:                  Well-labelled and well referred to diagram(s) / Tool(s) of analysis drawn with <b>precision</b> (where appropriate).                  Evidence(s).  <b>Logical</b> structure.</p>
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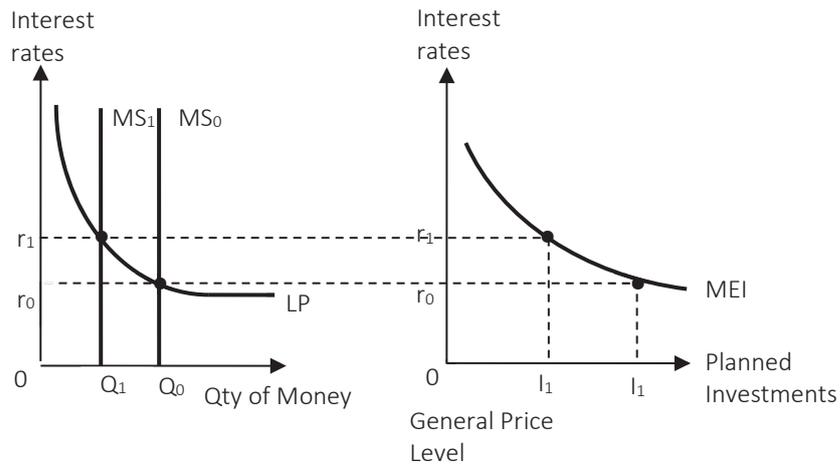
	<p><b>L2</b> <b>4-6</b> <b>marks</b></p>	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <p>At least <b>GOOD breadth</b> that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. <b>MOST</b> points chosen should be of <b>relevance</b> and <b>significance</b> in answering the question.</p> <p>At least <b>GOOD depth</b> in economic analysis that reflects the following in <b>MOST</b> explanations. <b>Accurate</b> use of economic concepts, <b>clear</b> elaboration, and <b>precise</b> use of economic terminologies, language and phrasing.</p> <p>The answer should also be supported by: Well-labelled and well referred to diagram(s) / Tool(s) of analysis drawn with <b>precision</b> (where appropriate). Evidence(s). <b>Logical</b> structure.</p>
	<p><b>L1</b> <b>1-3</b> <b>marks</b></p>	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <p><b>INSUFFICIENT</b> 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.</p> <p><b>INSUFFICIENT</b> 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>
	<p><b>E2</b> <b>2-3</b> <b>marks</b></p>	<p>For an evaluation that contains:</p> <ul style="list-style-type: none"> <li>➤ A synthesis of earlier economic arguments to arrive at <b>relevant</b> judgements/decisions (i.e. answer the question).</li> <li>➤ Well-explained criteria-based evaluative comments supported by <b>accurate</b> and <b>clear</b> analysis to provide <b>fairness</b> in views.</li> <li>➤ A good summative conclusion.</li> </ul>
	<p><b>E1</b> <b>1</b> <b>mark</b></p>	<p>For an evaluation that contains:</p> <ul style="list-style-type: none"> <li>➤ <b>Relevant but unexplained</b> evaluative judgement(s)/ statement(s) i.e. <b>evaluative judgement(s)/statement(s)</b> not supported by analysis or</li> <li>➤ A <b>relevant</b> conclusion.</li> </ul>

**Question 2**

**Suggested Answers:**

(a)	Using the data in Figure 2, compare the economic growth rate in the EU with the UK and EU without the UK over the period 2015–2019. [2]
	<ul style="list-style-type: none"> <li>• From 2015 to 2019, the economic growth rate in the European Union with and without the UK decreased. [1]</li> <li>• However, the economic growth rate in the European Union without the UK is consistently higher than that with the UK. [1]</li> </ul>
(b)	Explain how government spending can boost the UK economy and comment on the appropriateness of taxing the higher-income group and the corporations to finance the government spending. [6]
	<p><u>Explain how government spending boosts economy</u></p> <ul style="list-style-type: none"> <li>• Government spending (G) can increase aggregate demand (AD), since it is a component of AD.</li> <li>• Real national output is increased.</li> <li>• Therefore, there would be economic growth.</li> </ul> <p><u>Comment on appropriateness of taxing those at the top and the corporations to finance spending</u></p> <ul style="list-style-type: none"> <li>• The Labour party’s plans of taxing the higher-income bracket and corporations to finance government spending may lead to a decrease in consumption and investment.</li> <li>• Therefore, government spending may end up merely replacing the spending on consumption and investment, with no added impact on the economy.</li> <li>• However, it is appropriate to fund the fiscal spending using taxes on those with higher income and firms in order for greater inclusivity in economic growth.</li> </ul>
(c)	With reference to Extract 7:
(i)	With the aid of a diagram, explain the effect of the cutback in crude oil production on inflation in the UK. [5]
	<ul style="list-style-type: none"> <li>• The cutback in crude oil production causes the price of oil to rise.</li> <li>• As the price of oil, which is imported from the Middle East increases, there will be an increase in cost of production across the UK economy, leading to a fall in short-run aggregate supply (SRAS) from SRAS<sub>0</sub> to SRAS<sub>1</sub> in Figure 1.</li> <li>• Well-labelled and referred to diagram</li> </ul>

	 <p style="text-align: right;">Figure 1: Effect of rise in oil price</p> <ul style="list-style-type: none"> <li>As such, price levels increase from <math>P_0</math> to <math>P_1</math>, leading to inflation.</li> </ul>
(ii)	<p>Assess the validity of the view that the UK economy 'does not need to be cooled with another rate rise'. [9]</p>
	<p><u>Introduction:</u></p> <ul style="list-style-type: none"> <li>A rate rise refers to an interest-rate based monetary policy which is usually carried out when an economy is running at full capacity, with demand-pull inflation.</li> <li>An interest rate rise is implemented to curb inflation.</li> </ul> <p><u>Explain interest-rate policy using indirect transmission mechanism</u></p> <ul style="list-style-type: none"> <li>When money supply is decreased from <math>MS_0</math> to <math>MS_1</math>, as shown in Figure 2 below, the interest rate increases from <math>r_0</math> to <math>r_1</math>.</li> </ul>



**Figure 2:** Effects of an Contractionary Monetary Policy under Full Employment

- As interest rate rises, the cost of borrowing rises. Therefore, the rate of return from investments fall, leading to a fall in planned investments from  $I_0$  to  $I_1$ .
- As investment ( $I$ ) falls, aggregate demand ( $AD$ ) falls from  $AD_0$  to  $AD_1$ , since  $I$  is a component of  $AD$ .
- Hence, real national output falls and the general price level falls from  $P_0$  to  $P_1$ , easing demand-pull inflation.

The economy does not need to be cooled with a rate rise

Slowing GDP in the UK

- The GDP in the UK **slowed** even with robust global economy, indicating that the economy could fall into a recession should there be an interest rate rise.
- Aggregate demand ( $AD$ ) will fall since  $C$  and  $I$  fell, causing the real output to **fall**.
- **Given the weak** economy in the UK, this could lead to an even greater slowdown in the economy or a recession.

The economy may need to be cooled with a rate rise

Explain demand-pull inflation in the UK

- The fall in the value of the pounds led to a fall in prices of exports in foreign currency. Therefore, export revenue will increase since demand for exports

		<p>increase, as seen from Extract 7 where manufacturing exports are likely to gain from the depreciation.</p> <ul style="list-style-type: none"> <li>• Net exports increase and thus, AD increases, leading to increases in real national output.</li> </ul> <p><u>Evaluative conclusion:</u> <u>Root cause of inflation</u></p> <ul style="list-style-type: none"> <li>• Whether an increase in interest rate is required depends on the root cause of inflation in the UK.</li> </ul> <p><b><u>Mark Scheme</u></b></p> <table border="1"> <tr> <td> <p><b>L2 4-6 marks</b></p> </td> <td> <p>For an answer that demonstrates knowledge and understanding with excellent application and analysis:</p> <ul style="list-style-type: none"> <li>➤ Excellent <b>breadth</b> that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of <b>relevance</b> and <b>significance</b> in answering the question.</li> <li>➤ Excellent <b>depth</b> in economic analysis that reflects the following in MOST explanations.</li> <li>➤ <b>Accurate</b> use of economic concepts, <b>clear</b> elaboration, and <b>precise</b> use of economic terminologies, language and phrasing.</li> </ul> <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> <li>➤ Well-labelled and well referred to diagram(s) / Tool(s) of analysis drawn with <b>precision</b> (where appropriate).</li> <li>➤ Evidence(s).</li> <li>➤ <b>Logical</b> structure.</li> </ul> </td> </tr> <tr> <td> <p><b>L1 1-3 marks</b></p> </td> <td> <p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> <li>➤ At least <b>GOOD breadth</b> that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of <b>relevance</b> and <b>significance</b> in answering the question.</li> <li>➤ At least <b>GOOD depth</b> in economic analysis that reflects the following in MOST explanations.</li> <li>➤ <b>Accurate</b> use of economic concepts, <b>clear</b> elaboration, and <b>precise</b> use of economic terminologies, language and phrasing.</li> </ul> <p>The answer should also be supported by:</p> </td> </tr> </table>	<p><b>L2 4-6 marks</b></p>	<p>For an answer that demonstrates knowledge and understanding with excellent application and analysis:</p> <ul style="list-style-type: none"> <li>➤ Excellent <b>breadth</b> that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of <b>relevance</b> and <b>significance</b> in answering the question.</li> <li>➤ Excellent <b>depth</b> in economic analysis that reflects the following in MOST explanations.</li> <li>➤ <b>Accurate</b> use of economic concepts, <b>clear</b> elaboration, and <b>precise</b> use of economic terminologies, language and phrasing.</li> </ul> <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> <li>➤ Well-labelled and well referred to diagram(s) / Tool(s) of analysis drawn with <b>precision</b> (where appropriate).</li> <li>➤ Evidence(s).</li> <li>➤ <b>Logical</b> structure.</li> </ul>	<p><b>L1 1-3 marks</b></p>	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> <li>➤ At least <b>GOOD breadth</b> that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. MOST points chosen should be of <b>relevance</b> and <b>significance</b> in answering the question.</li> <li>➤ At least <b>GOOD depth</b> in economic analysis that reflects the following in MOST explanations.</li> <li>➤ <b>Accurate</b> use of economic concepts, <b>clear</b> elaboration, and <b>precise</b> use of economic terminologies, language and phrasing.</li> </ul> <p>The answer should also be supported by:</p>
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			<ul style="list-style-type: none"> <li>➤ Well-labelled and well referred to diagram(s) / Tool(s) of analysis drawn with <b>precision</b> (where appropriate).</li> <li>➤ Evidence(s).</li> <li>➤ <b>Logical</b> structure.</li> </ul>
		<b>E2 2-3 marks</b>	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> <li>➤ A synthesis of earlier economic arguments to arrive at <b>relevant</b> judgements/decisions (i.e. answer the question).</li> <li>➤ Well-explained criteria-based evaluative comments supported by <b>accurate</b> and <b>clear</b> analysis to provide <b>fairness</b> in views.</li> <li>➤ A good summative conclusion.</li> </ul>
		<b>E1 1 mark</b>	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> <li>➤ Relevant but unexplained evaluative judgement(s)/statement(s) i.e. evaluative judgement(s)/statement(s) not supported by analysis or</li> <li>➤ A relevant conclusion.</li> </ul>
(d)	Explain why living standards in Britain has been under pressure despite the acceleration in earnings growth. [3]		
	Inflation rate increased by more than wage growth rate. Thus, there is lower purchasing power, resulting in lower material standard of living.		
(e)	With reference to Extract 10, explain whether consumers or the German car manufacturers are likely to bear a greater burden of the tariffs. [8]		
	<ul style="list-style-type: none"> <li>• The imposition of tariffs leads to an increase in cost of production. Thus, price increases, ceteris paribus.</li> <li>• Since the purchase of cars take up a relatively large proportion of income, the PED value is likely to be greater than 1.</li> <li>• Cars are manufactured goods, which can be produced via automation through a short time period. This means that the PES value is likely to be greater than 1.</li> <li>• Although both PED and PES values are greater than 1, PED value is likely to be higher than that of PES because German cars are substitutable by cars from other manufacturers which are not impacted by tariff changes. <i>Note: any other logical explanations can be accepted</i></li> <li>• Therefore, the German car manufacturers will bear the greater burden of it.</li> </ul>		
(f)	Discuss the likely impact of Brexit on economic growth in the UK and Germany. [12]		
	<p><u>Introduction:</u></p> <ul style="list-style-type: none"> <li>• Economic growth is the increase in real national income or GDP over a period of time. It consists of both actual and potential growth.</li> </ul>		

- Actual growth is the actual increase in real output or equilibrium national income, which can be due to an increase in aggregate demand or short run aggregate supply.
- Potential growth is the rate of increase in potential output or productive capacity shown by an increase in the long run aggregate supply.

### Impact of Brexit on economic growth in the UK

#### Positive impact on the UK

- The fall in the value of the pounds lead to a fall in prices of exports in foreign currency. Therefore, export revenue will increase since demand for exports increase.
- AD increases from  $AD_0$  to  $AD_1$  as shown in Figure 3, leading to an increase in real national output from  $Y_0$  to  $Y_1$  via the multiplier process.
- This increases the actual growth of the economy.

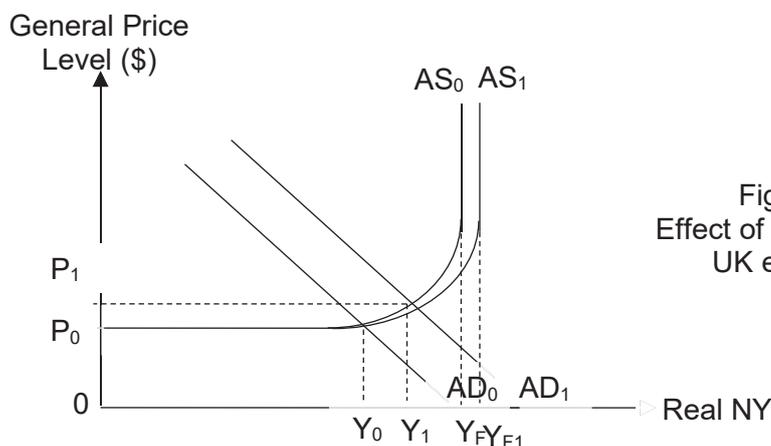


Figure 3:  
Effect of Brexit on the  
UK economy

#### Negative impact on the UK

- Brexit-related uncertainty may lead to a fall in C and I as economic outlook is uncertain.
- Consumers are unwilling to spend on consumption while businesses are unwilling to spend on investment since the future is uncertain.
- These lead to a fall in AD, which can offset the increase in AD due to net exports. Thus, AD may increase by a smaller extent from  $AD_0$  to  $AD_1$ .
- Actual growth will slow down, assuming that the economy is not at full employment level.

### Impact of Brexit on economic growth in Germany:

#### Positive impact on Germany

- With Brexit causing the UK to lose its appeal in attracting skilled immigrants, there can be an increase in migration to Germany and hence, quantity of skilled labour.
- Therefore, productive capacity is increased.

- AS shifts right from  $AS_0$  to  $AS_1$  in Figure 4 as a result and both potential and actual growth are increased.

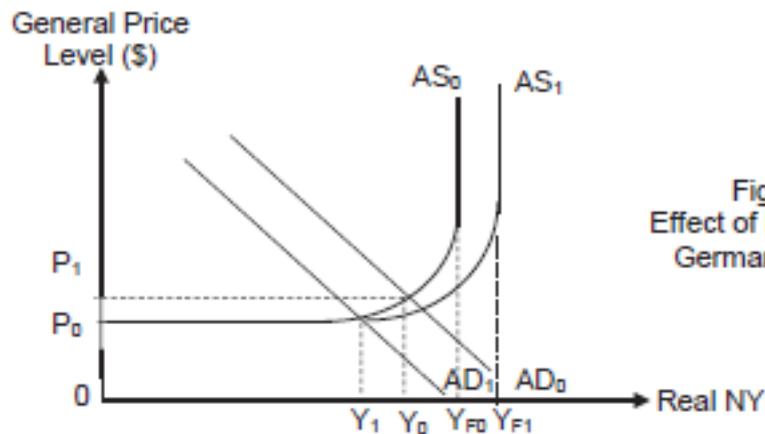


Figure 4:  
Effect of Brexit on the  
German economy

Evaluative conclusion:

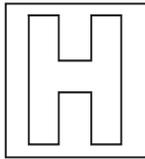
- For the UK, whether Brexit ultimately positively impacts the economy is dependent on the extent of increase and decrease in AD.

Mark Scheme

<p>L3 7-9 marks</p>	<p>For an answer that demonstrates knowledge and understanding with excellent application and analysis:</p> <ul style="list-style-type: none"> <li>➤ Excellent <b>breadth</b> 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.</li> <li>➤ Excellent <b>depth</b> in economic analysis that reflects the following in MOST explanations.</li> <li>➤ <b>Accurate use of economic concepts</b>, clear elaboration, and precise use of <b>economic terminologies</b>, language and phrasing.</li> </ul> <p>The <b>answer should also be</b> supported by:</p> <ul style="list-style-type: none"> <li>➤ <b>Well-labelled and</b> well referred to diagram(s) / Tool(s) of <b>analysis drawn</b> with precision (where appropriate).</li> <li>➤ <b>Evidence(s)</b>.</li> <li>➤ <b>Logical structure</b></li> </ul>
<p>L2 4-6 marks</p>	<p>For an answer that demonstrates knowledge and understanding but lacks application and analysis:</p> <ul style="list-style-type: none"> <li>➤ At least <b>GOOD breadth</b> that considers the following economic concepts in explaining multiple and balanced perspectives,</li> </ul>

		<p>viewpoints, relationships and factors. MOST points chosen should be of <b>relevance</b> and <b>significance</b> in answering the question.</p> <ul style="list-style-type: none"> <li>➤ At least GOOD <b>depth</b> in economic analysis that reflects the following in MOST explanations.</li> <li>➤ <b>Accurate</b> use of economic concepts, <b>clear</b> elaboration, and <b>precise</b> use of economic terminologies, language and phrasing.</li> </ul> <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> <li>➤ Well-labelled and well referred to diagram(s) / Tool(s) of analysis drawn with <b>precision</b> (where appropriate).</li> <li>➤ Evidence(s).</li> <li>➤ <b>Logical</b> structure.</li> </ul>	
	<b>L1 1-3 marks</b>	<p>For an answer that demonstrates knowledge but lacks understanding, application and analysis:</p> <ul style="list-style-type: none"> <li>➤ 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.</li> <li>➤ INSUFFICIENT depth in economic analysis that may reflect the following:</li> <li>➤ 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.</li> </ul>	
	<b>E2 2-3 marks</b>	<p>For an evaluation that contains:</p> <ul style="list-style-type: none"> <li>➤ A synthesis of earlier economic arguments to arrive at <b>relevant</b> judgements/decisions (i.e. answer the question).</li> <li>➤ Well-explained criteria-based evaluative comments supported by <b>accurate</b> and <b>clear</b> analysis to provide <b>fairness</b> in views.</li> <li>➤ A good summative conclusion.</li> </ul>	
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**ECONOMICS**

**8823/01**

Paper 1

**17 September 2019**

**3 hours**

Additional Materials: Answer Booklet

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**READ THESE INSTRUCTIONS FIRST**

Answer **all** questions.

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

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

For each Answer Booklet:

Write your name, Centre number and index number on the first page of all Answer Booklets that you hand in. Write clearly and use capital letters. For each booklet, use both sides of the paper.

Write dark blue or black pen. HB pencil may be used for graphs and diagrams only.

DO **NOT** WRITE ON ANY BARCODES.

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

↓

Question	Part	
1	ai	
1	aii	

↑

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

Do not tear out any part of the Answer Booklets.

All work must be handed in. If you have used any additional booklet, please insert it inside the first Answer Booklet of the respective question.

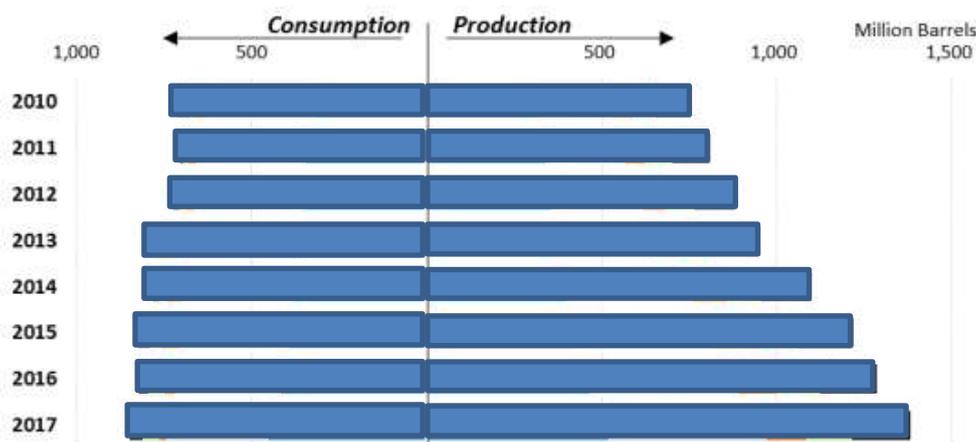


Answer **all** questions.

### Question 1

#### Plastics and its impact

**Figure 1: Consumption and Production of Natural Gas Liquids (NGLs)**



Source: *U.S. Energy Information Administration*, 2018

#### Extract 1: Rise in bottled water

The demand for bottled drinks has contributed to the alarming increase in the demand for plastic packaging. The demand, equivalent to about 20,000 bottles being bought every second, is driven by an apparently great desire for bottled water and the spread of a western, urbanised “on the go” culture to China and the Asia Pacific region.

More than 480 billion plastic drinking bottles were sold in 2016 across the world, up from about 300 billion a decade ago. This could be due to a desire for healthy living and there are ongoing concerns about groundwater contamination and the quality of tap water, which all contribute to the increase in bottle water use.

Source: *The Guardian*, 28 June 2017

#### Extract 2: Investments in plastics plants in the US

In the US, fossil fuel and petrochemical companies are investing hundreds of billions of dollars to expand plastic production capacity. This includes new plastic “cracking” plants that will produce the raw material for plastic packaging.

The new plants – being built by corporations like Exxon Mobile Chemical and Shell Chemical – will help fuel a 40% rise in plastic production in the next decade, according to experts, exacerbating the plastic pollution crisis that scientist warn already risks “near permanent pollution of the earth.”

The huge investment in plastic production has been driven by the shale gas boom in the US, fuelled by the revolution in shale gas technologies such as advancements in fracking and horizontal drilling, to produce Natural Gas Liquids (NGLs), which is an essential raw material in the production of plastics.

Source: *The Guardian*, 26 December 2017

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**Extract 3: The use of bio-based packaging**

Plastic packaging comprises of both non-recyclable and recyclable or bio-based packaging. Non-recyclable packaging generates pollution and uses Natural Gas Liquids (NGLs), as well as other non-renewable resources. When it is discarded, it creates waste that can disrupt ecosystems and sit for hundreds of years. On the other hand, bio-based packaging comes from renewable materials and can be recycled, offering an alternative to non-recyclable products.

United States Department of Agriculture (USDA) has implemented a product certification scheme for bio-based packaging. Companies with bio-based packaging voluntarily submit their product information in order to qualify for a “USDA Certified Bio-based Product” label. Similar to the effect of positive product differentiation provided by other USDA labels, such as “USDA certified organic”, qualifying for USDA’s bio-based label promotes the increased sale of products derived from renewable resources. This can help companies to create a larger, more loyal consumer base as well. Companies that cater to consumers’ sense of environmental responsibility have seen significant benefits in terms of their profits.

Source: *Medium.com*, 30 March 2017

**Extract 4: Call for action to reduce harm of plastics**

Environmental groups are demanding curbs on the production of plastic. Some argue that single-use plastic items should be banned.

EIA oceans campaigner Sarah Baulch called for global leadership and urgent action to tackle the problem. “Our marine wildlife is choking on an ever-growing tidal wave of plastics manufactured to be used once and almost instantly discarded, leaving a polluted legacy for our environment and future generations,” she said.

Source: *The Herald*, 10 December 2017

**Extract 5: Consumers’ positive perception of bio-based packaging**

Researchers found that many manufacturers and retailers are increasingly choosing drop-in bio-based packaging, which is chemically identical to the traditional packaging but made from renewable raw materials instead of Natural Gas Liquids (NGLs). Their research also shows that increasingly environmentally conscious consumers, too, prefer bio-based packaging over conventional packaging. This provides support for the likely success of encouraging consumption of bio-based packaging in dealing with the adverse impact of plastic packaging on the environment.

Since those materials are, however, not always easily distinguishable by consumers simply by the way they look or feel, the environmental benefits have to be communicated clearly by providing information, for example, on the renewable feedstock, bio-based content, or the reduction of greenhouse gas emissions.

Source: *European Bioplastics*, 29 January 2018

**Extract 6: Excise tax on plastic packaging**

Indonesia is the world's second-largest plastic waste producer, after China. It is estimated that each Indonesian individual consumes 700 plastic bags per year. This is why rivers are usually clogged with plastic and other trash, particularly in the bigger cities.

According to preliminary information from Indonesia's Finance Ministry, the excise tax will be imposed on all products wrapped in plastic packaging, including bottles, bags and sachets. However, lower rates may apply for those companies that focus on recycling activities and therefore cause less damage to the environment.

However, others claim that the new excise tax is not fair, and goes against a basic human right. In Indonesia's urban centers, people cannot drink water from the tap, while river water is highly polluted. As such, they are dependent on plastic-bottled water. Easy access to clean water (including a low sales price) is regarded a primary right of the people, and therefore some opponents of the excise tax request the government not to touch this segment.

Another issue is that plastic packaging has become a vital component in people's lives. Plastic is a cheap, relatively safe and long-lasting form of packaging for food products and beverages.

Business groups say the government should focus on the development of good public waste management systems that is accessible to everyone. It involves the collection, transportation, treatment and disposal of waste in public areas.

Source: *Indonesia Investments*, 25 July 2016

**Questions**

- (a) With reference to Figure 1, explain the likely change in price of Natural Gas Liquids (NGLs) from 2010 to 2017. [2]
- (b) (i) Using Extract 1, explain one demand factor that could account for the increase in consumption of plastic packaging. [2]
- (ii) Using Extract 2 and with the help of a diagram, analyse how the demand factor might impact the market for plastic packaging. [4]
- (c) Discuss how the product certification scheme in Extract 3 might incentivise firms to use bio-based packaging. [8]
- (d) Consumers in Indonesia's urban centers rely on bottled water as water from the tap is unfit for consumption due to the heavily polluted water sources.
- Provide an economic justification to why the price of bottled water may be a concern to the government. [2]
- (e) Explain one likely opportunity cost of installing a public waste management system. [2]
- (f) Extract 6 suggested developing good public waste management systems.
- Identify and explain the two characteristics of a 'public good' and comment on whether the public waste management system is considered a public good. [7]
- (g) (i) Explain the case for government intervention in the market for non-recyclable plastic packaging. [6]
- (ii) Discuss whether imposing an excise tax is the best policy to achieve allocative efficiency in the consumption of non-recyclable plastic packaging. [12]

[Total: 45]

## Question 2

## Issues in China and India

Table 1: Economic Growth in China and India (%)

	2012	2013	2014	2015	2016	2017
India	5.5	6.4	7.4	8.0	8.2	7.2
China	7.9	7.8	7.3	6.9	6.7	6.8

Source: World Bank

Table 2: Key Indicators in China and India (2017)

	China	India
GDP per capita (PPP)	15254.0	6516.2
Life expectancy at birth, total (years)	76.3	68.6
*PM10 (micrograms per cubic meter)	412.0	499.0

\*PM10 refers to harmful particles less than 10 microns in diameter found in the air

Source: Trading Economics

**Extract 7: Implementation of the new Goods and Services Tax in India**

During a special parliament assembly, the Prime Minister of India launched the Goods and Services Tax (GST) where goods and services will be taxed under four basic rates - 5%, 12%, 18% and 28%. Prior to the implementation of the GST, firms having business interests in seven states in India would have to deal with seven different tax authorities along with seven different tax rates in value added tax paid by them, making it difficult to do business in India.

It is estimated that the GST is going to play an intricate role in boosting the country's GDP and reducing the fiscal deficit, thereby creating a win-win situation both for the government and the firms.

Source: *Forbes*, 10 July 2017**Extract 8: What's ailing the Indian economy and how to fix it?**

For the past few weeks, the slowdown of the Indian economy has made headlines, forcing the government to consider a revival plan. The growth of the economy has slowed to a four-year low because of weakening consumption demand and a near stalling of investment. Much of this deterioration has been blamed on the rollout of the goods and services tax.

Pushing the Reserve Bank of India to reduce interest rates or the government to cut taxes can bring relief to these ailing sectors of the economy. However, the most critical short term priority is to restore confidence among businesses, which have increasingly grown wary of policy surprises and shocks.

Source: *Hindustan Times*, 24 September 2017

### **Extract 9: Chinese growth slips to slowest pace for 26 years**

China's economy slowed further last year to expand at its weakest pace for quarter of a century, with warnings that it risks losing further momentum in 2017 as Donald Trump's presidency creates new challenges for China. The world's second-largest economy grew 6.7% last year, meeting Beijing's target range of 6.5 – 7% but was the slowest growth since 1990.

Forecasters see the outlook for global growth as particularly uncertain, with a change of administration in the US, key elections in the Eurozone and the UK embarking on Brexit negotiations. With China still struggling to shift its economy away from a reliance on investment and exports to consumption, any slowdown in global trade will be keenly felt in the country.

Trump has pledged to impose high taxes on imports from China and to brand the country as a currency manipulator. The president-elect has long maintained that the People's Bank of China has been devaluing its currency to make its exports more competitive in overseas markets.

Source: *The Guardian*, 20 January 2017

### **Extract 10: The China miracle isn't over – it has entered its second phase**

For the last six years, China has averaged just 6 – 9% growth, leading some economists to declare the end of the China miracle. However, they are wrong, China has simply entered her second phase.

China is the fastest-growing consumer market in the world. Chinese shoppers are powering the growth of China and the global economy and their power will only grow in the next decade. No one could have predicted even seven years ago that major brands from Western multinational corporations to small and medium-sized enterprises would add special days such as the 11-11 (Singles' Day) and the Spring Festival (Chinese New Year Golden Week) to their holiday promotions calendar. During the last National Day Golden Week, Chinese shoppers on holiday in Japan were so numerous and free-spending that they actually contributed a significant amount to Japan's GDP.

Unlike some countries in the West who want to bring low-end, low-value manufacturing back to the country, China is moving beyond low-end export and infrastructure investment to advanced, technology-driven, high value-added production. The country had started to invest heavily in tech research and development, and through companies like Huawei, China is beginning to export advanced technologies to markets around the world.

Source: *Forbes*, 30 March 2017

### Extract 11: OECD highly praises structural reforms of the Chinese government

China will deepen structural reforms while maintaining steady economic growth in 2018 as top leaders seek to prevent a growing fiscal debt which might destabilise the economy. An evaluation report released by the Organisation for Economic Cooperation and Development (OECD) has highly praised China's structural reform. Many countries slowed their reforms after the international financial crisis, but China still pressed ahead with tax cuts and improved education and training, alongside other efforts in structural reforms. President Xi Jinping had said at a party congress that China will be striving for sustainable growth and these reforms are also expected to help reduce the emissions of major pollutants.

Sources: *The State Council of the People's Republic of China*, accessed 7 August 2019, and *Reuters*, 8 December 2017

### Questions

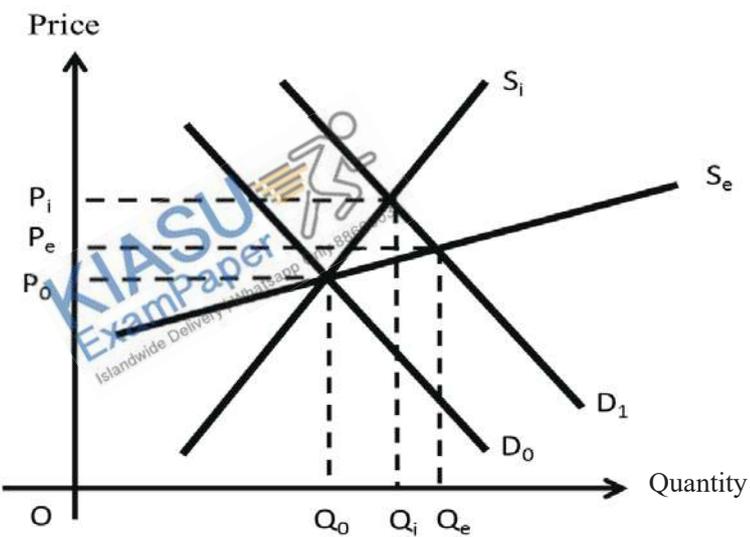
- (a) Compare the economic growth rates between China and India from 2012 to 2016. [2]
- (b) With reference to Table 1, discuss the extent to which the data reflects that China has a higher standard of living than India. [8]
- (c) Using AD/AS diagrams, discuss the likely effects of the implementation of the GST on the economy of India. [8]
- (d) (i) Extract 8 mentioned that reducing interest rates can 'bring relief to these ailing sectors of the economy'.  
Explain how a fall in interest rate can 'bring relief to these ailing sectors of the economy'. [2]
- (ii) Explain **two** factors that will determine the impact of the above approach on the national income of India. [4]
- (e) Explain how the devaluation of the Chinese Yuan will affect net exports of China. [4]
- (f) Explain **two** reasons why China is shifting her economy away from a reliance on investment and exports to consumption and **one** possible unintended consequence that might arise. [6]
- (g) 'Many countries slowed their reforms after the international financial crisis, but China still pressed ahead with tax cuts and improved education and training.'  
Discuss whether supply-side policy through tax cuts is the most appropriate policy to achieve sustainable growth in China. [11]

[Total: 45]



RVHS H1 Prelim Exams – Solutions

[CSQ1]

(a)		<p><b>With reference to Figure 1, explain the likely change in price of Natural Gas Liquids (NGLs) from 2010 to 2017.</b></p>	[2]
		<p>The increase in production exceeds the increase in consumption of NGLs OR the increase in quantity supplied exceeds increase in quantity demanded at original price level OR the increase in supply exceeds increase in demand. [1]</p> <p>This led to the decrease in price of NGLs OR this causes a downward pressure on prices of NGLs.[1]</p>	
(b)	(i)	<p><b>Using Extract 1, explain one demand factor that could account for the increase in consumption of plastic packaging.</b></p>	[2]
		<p>As mentioned in Extract 1, there is a great desire for bottled water and there is a spread of a western, urbanised “on the go” culture OR there is a desire for healthy living and growing concerns about groundwater contamination, resulting in a shift of <b>taste and preferences</b> towards bottled water.[1: Evid + determinant]</p> <p>Since plastic packaging is a <b>factor input</b> used in the production of bottled water, an increase in demand for bottled water would lead to an increase in <b>derived demand</b> for plastic packaging OR an increase in demand for bottled water would lead to an increase in <b>derived demand</b> for plastic packaging. [1]</p>	
(b)	(ii)	<p><b>Using Extract 2 and with the help of a diagram, analyse how the demand factor might impact the market for plastic packaging.</b></p>	[4]
		<p>As mentioned in part bi), a <b>rise in demand</b> for plastic packaging is represented by a <b>rightward shift from <math>D_0</math> to <math>D_1</math></b> as shown in figure 1. This will lead to an <b>increase in equilibrium price from <math>P_0</math> to <math>P_i</math></b> and <b>increase in equilibrium quantity from <math>Q_0</math> to <math>Q_i</math></b>. [1]</p>  <p style="text-align: center;">Fig1: Market for plastic packaging</p>	

	<p>1 mk for diagram (If student just drew the increase in DD and one SS curve without elasticity with full labelling and reference to diagram, the mark can be awarded)</p> <p>The magnitude of the increase in price and quantity will be dependent on the price elasticity of supply. <b>Supply is likely to be price elastic in the long run due to availability of space capacity as a result of the investment in new plastic “cracking” plants which would fuel a 40% rise in plastic production in the next decade</b> as mentioned in extract 2. [1]</p> <p>There would be a <b>larger increase in quantity from <math>Q_0</math> to <math>Q_e</math></b> when supply is relatively more price elastic (<math>S_e</math>), <b>as compared to the increase in quantity from <math>Q_0</math> to <math>Q_i</math></b> when supply is relatively more price inelastic (<math>S_i</math>). There would be <b>smaller increase in price from <math>P_0</math> to <math>P_e</math></b> when supply is relatively more price elastic (<math>S_e</math>), as compared to the increase in price from <math>P_0</math> to <math>P_i</math> when supply is relatively more price inelastic (<math>S_i</math>).[1]</p> <p>(If student only drew <i>one</i> supply curve e.g. <math>S_e</math> but wrote that this is a smaller price increase and larger increase in qty in the long run, full credit can be awarded for the last mark)</p>
(c)	<p><b>Discuss how the product certification scheme in Extract 3 might incentivise firms to use bio-based packaging.</b> [8]</p>
	<p>According to Extract 3, consumers’ sense of environmental responsibility have benefited firms. Firms might be incentivised to use bio-based packaging as it increases total revenue i.e. price multiplied by quantity via its impact on demand and price elasticity of demand (PED).</p> <p><u>Affects DD:</u> This sense of environmental responsibility would have could have led to a <b>change in taste and preference towards products</b> which uses bio-based packaging. Hence, this would cause consumers to <b>increase the demand</b> for these products which <b>increases its equilibrium price and quantity</b>. Hence, firms would be incentivise to use the packaging as it <b>increases total revenue</b>.</p> <p><u>Affects PED:</u> Since there might be many firms selling similar products, the demand for a firm’s product might be <b>relatively price elastic</b>. However, by using bio-based packaging and getting it <b>certified by USDA</b> as mentioned in Extract 3, the firms engages <b>product development which created a real difference</b>. This includes an <b>improvement in the feature</b> of its product through the quality of its packaging.</p> <p>Hence, firms would be able to <b>reduce the PED</b> of its products by <b>reducing the degree of substitutability</b>. As a result, firms would able to <b>increase price to increase total revenue</b> OR enabling them to <b>enjoy an increase in total revenue even without the need to lower price</b>.</p> <p><u>Evaluation:</u> Even though the bio-based packaging appeals to those with a sense of environmental responsibility, it is less likely to be impactful as compared to the USDA certified organic label. This might because consumers might not regard</p>

	<p>the bio-based packaging as a significant improvement in the feature of the product as compared organic products. This might not significantly reduce the degree of substitutability of the products that use bio-based packaging. Hence, it might not incentivise producers enough to switch to the new packaging.</p> <table border="1"> <thead> <tr> <th>Level</th> <th>Description</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>L2</td> <td>A <b>developed</b> and <b>balanced</b> discussion on the various ways in which this scheme might incentivise firms to use bio-based packaging.</td> <td>4-6</td> </tr> <tr> <td>L1</td> <td>A <b>developed one-sided</b> response on one way in which this scheme might incentivise firms to use bio-based packaging.  OR An <b>undeveloped</b> discussion on the various ways in which this scheme might incentivise firms to use bio-based packaging.</td> <td>1-3</td> </tr> </tbody> </table> <p>addition, up to a <b>further 2 marks</b> for valid evaluative comment. This should focus on the situation(s) in which this scheme might not incentivise firms to use bio-based packaging.</p>	Level	Description	Marks	L2	A <b>developed</b> and <b>balanced</b> discussion on the various ways in which this scheme might incentivise firms to use bio-based packaging.	4-6	L1	A <b>developed one-sided</b> response on one way in which this scheme might incentivise firms to use bio-based packaging.  OR An <b>undeveloped</b> discussion on the various ways in which this scheme might incentivise firms to use bio-based packaging.	1-3	In
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(d)	<p><b>Consumers in Indonesia’s urban centers rely on bottled water as water from the tap is unfit for consumption due to the heavily polluted water source.</b></p> <p><b>Provide an economic justification to why price of bottled water may be a concern to the government.</b></p>	[2]									
	<p>The price of bottled water may be a concern to the government due to its microeconomic objective of promoting <b>equity</b>. Clean drinking water is an <b>essential good</b> for people in Indonesia, as water from the tap is unfit for consumption. Thus, should price of bottled water be too high, the lower-income group may not be able to afford bottled water, thus losing accessibility to this essential good. This worsens inequity in the economy.</p>										
(e)	<p><b>Explain one likely opportunity cost of installing a public waste management system.</b></p>	[2]									
	<p>Opportunity cost is the benefit of the next best alternative forgone.</p> <p>The opportunity cost is the improved education infrastructure that could have been built [1] had the funds been channelled into education [1] instead of installing a public waste management system.</p>										

(f)		<p><b>Extract 6 suggested developing a good public waste management systems.</b></p> <p><b>Identify and explain the two characteristics of a ‘public good’ and comment on whether the public waste management system is considered a public good.</b></p>	<b>[7]</b>
		<p><b><u>Identify and explain the two characteristics of a ‘public good’:</u></b></p> <p>A public good is a good or service that has the characteristics of non-excludability and non-rivalry in consumption.  Non-excludability means it is impossible or prohibitively expensive to exclude any non-payers from using the good or service.  Non-rivalry means the consumption of the good by one does not diminish the amount available for consumption by others.</p> <p><b><u>Comment on whether the public waste management system is a public good</u></b></p> <p>The public waste management system is <b>not a public good</b> as it is <b>non-excludable and rivalrous in consumption</b>.  It is <b>non-excludable in consumption</b> as it is not possible to exclude non-payers such as tourists from throwing their rubbish into the waste disposal bins when the system is in place.  It is <b>rival in consumption</b> as the bins/ collection trucks have limited capacity to collect waste. Hence the usage of the bins by one resident would diminish the amount of space in the bins for other residents to throw their waste.</p>	
(g)	(i)	<p><b>Explain the case for government intervention in the market for non-recyclable plastic packaging.</b></p>	<b>[6]</b>
		<p>In the course of production of non-recyclable plastic packaging, costs are generated, such as private costs. The Marginal Private Cost (<b>MPC</b>) is the additional costs incurred by producers when producing one more unit of clothing which includes <b>workers’ wages, rent etc.</b></p> <p>In addition, external costs are also generated, in the form of negative externality. Negative externality is the <b>health cost associated with consuming water from plastic-polluted rivers</b> and the <b>lowered standard of living from living in a poor physical environment contributed by the plastic pollution</b>. This health cost is <b>borne, not by consumers or producers themselves, but by residents living along the rivers</b>, and they are not compensated for the harm caused. <b>[1]</b></p> <p>Since <b>MSC = MPC + MEC</b>, the presence of negative externalities causes <b>MSC to be higher than MPC / a divergence between MPC and MSC.[1]</b> Assuming there is no positive externalities (<b>MEB=0</b>) i.e. <b>MPB=MSB</b>, the market for non-recyclable plastic packaging can be represented in the figure below.</p>	

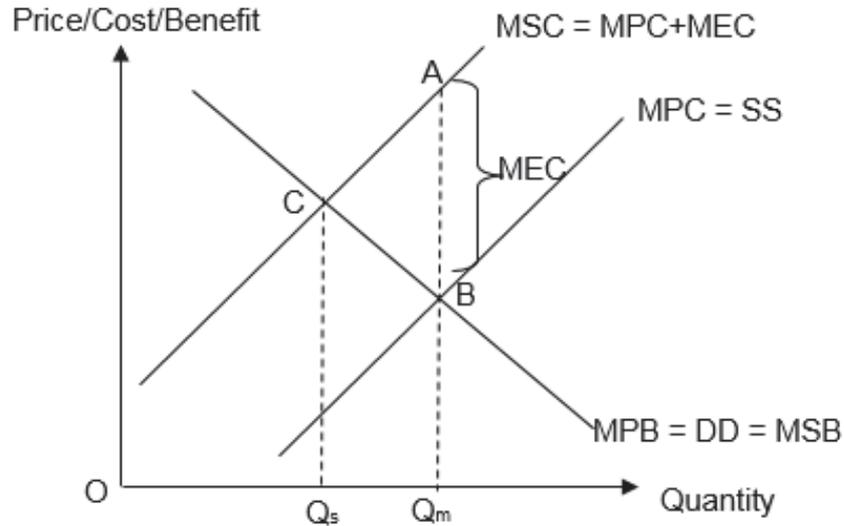


Fig 1: Market for non-recyclable plastic packaging

**Quality of diagram drawn [2]**

With reference to Figure 1, when left to the free market, the **consumption of the non-recyclable plastic packaging occurs at  $Q_m$ , where  $MPB=MPC$  (or  $DD=SS$ )**, since individuals only consider their private cost and benefit in decision making. They do not take into account the external costs imposed on third parties (MEC). However, the **socially optimal level of output is  $Q_s$ , given by the intersection of  $MSB$  and  $MSC$ , since society's welfare is maximised when  $MSB=MSC$ .** [1]

Given that  $Q_m > Q_s$ , there is an **overconsumption of non-recyclable plastic packaging [1]**, i.e. too much of resources are allocated to produce it.

**OR**

This results in **deadweight loss given by area ABC.[1]** Societal welfare can be increased if consumption falls from  $Q_m$  to  $Q_s$ .

	(g)	(ii)	Discuss whether imposing an excise tax is the best policy to achieve allocative efficiency in the consumption of non-recyclable plastic packaging.	[12]
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Due to the presence of negative externalities as explained in part h (i), consumers, there will be an over-consumption of non-recyclable plastic packaging, beyond the socially optimal level of consumption. Thus, government intervention is necessary to reduce consumption to achieve an efficient allocation of resources.

Policy Option 1: Excise tax

**As mentioned in extract 6, the government can impose an excise tax per unit on firms that uses non-recyclable plastic packaging for their products.** This translates to a tax imposed on each unit that is equivalent to MEC. This would increase the cost of production to the firms that uses plastic packaging for their products.

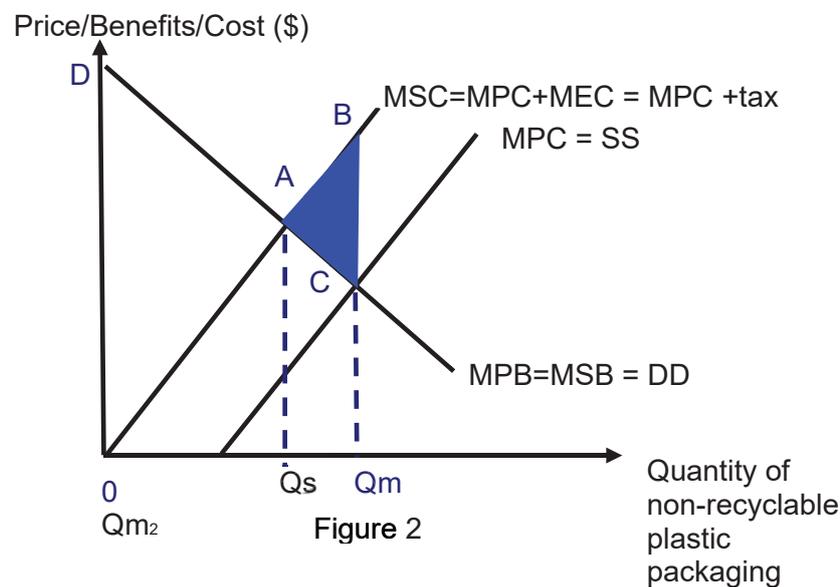
With reference to figure 2, This shifts the **MPC upwards, by the extent of MEC, to coincide with MSC**. This has the effect of **internalising the external cost** on third parties. This causes producers **to decrease production of products with plastic packaging from  $Q_m$  to  $Q_s$** . As a result, consumption of plastic packaging would also decrease from  $Q_m$  to  $Q_s$ . Since non-recyclable plastic packaging is a subset of plastic packaging, this tax would reduce consumption of non-recyclable plastic packaging.

However, this may not be effective as it is **difficult to calculate the exact amount of MEC**. Some of the external costs are difficult to quantify in monetary terms, for example, harm caused to marine wildlife (extract 3). Hence it is **difficult to calculate the exact amount of the indirect tax to charge to reduce the negative externalities**. On one hand, **too low a tax will be ineffective in curbing overconsumption**. On the other hand, **too high a tax will still result in an inefficient allocation of resources**.

Choose any 2 of the below:

Policy option 2: Ban

With reference to **Extract 4, the government may also implement a ban on non recyclable plastic packaging**. This would **effectively reduce market output significantly to  $Q = 0$ , where the market output is now at  $Q_{m_2}$** , with reference to the figure below. This is effective if the degree of externality is very large, such that the socially optimal level of output is close to zero, such that reducing the market output to 0 brings it close to allocative efficiency.



However, it is **not effective if the degree of negative externality is not large**; imposing a ban may actually contribute to greater allocative inefficiency. As shown in figure 2 below, **imposition of the ban may lead to a welfare loss of  $DA0 - ABC$  when market output falls from  $Q_m$  to 0**. This welfare loss after the imposition of the ban is **bigger than  $ABC$ , the welfare loss incurred before the imposition of the ban**.

Furthermore, this may not be effective as it is **difficult to monitor compliance and enforcement**, due to the wide availability of plastics production plants across countries. On a related note, attempting to monitoring compliance and

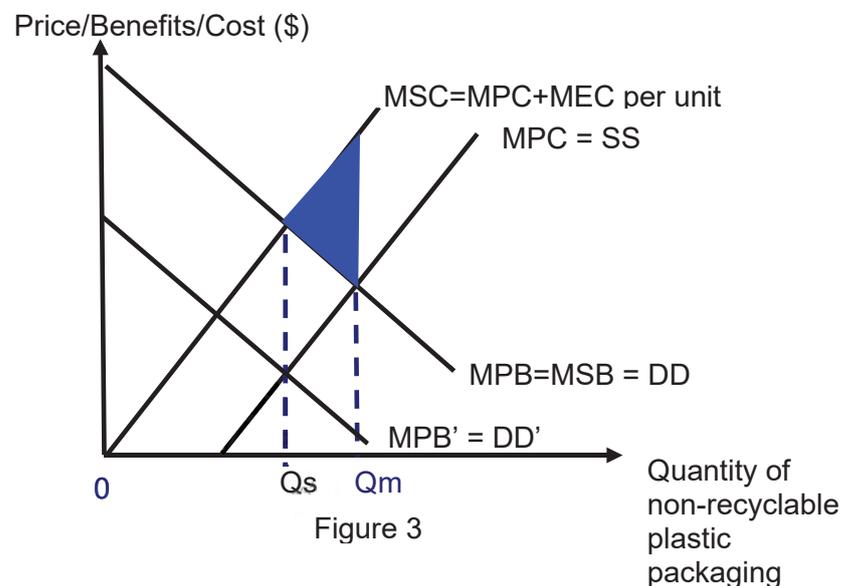
enforcement entails high cost. Hence, there is also opportunity cost of government funds incurred as the amount of public funds channelled for monitoring and enforcement could not be allocated to other purposes such as improving transport and communication facilities and building more educational and healthcare facilities.

Policy option 3: Moral suasion: promote consumption of bio-based packaging by consumers

The government can also use **moral suasion to encourage consumers to consume products wrapped in bio-based packaging, as suggested in extract 5**. Since there are increasingly environmentally conscious consumers who prefer bio-based packaging, the government **may further encourage these consumers through advertisements and campaigns to consume more of bio-based packaging**, by tapping on their environmental responsibility and preference for bio-based packaging. This would have the **effect of reducing MPB of non-recyclable plastic packaging from MPB to MPB'** as shown in the figure below, such that the market output **increases to reach the socially optimal level of output of  $Q_s$** , thus achieving allocative efficiency.

However, its effectiveness depends on the **recipients' responses to these messages**. It is **difficult to change the habit of consumers**, especially those who do not prefer bio-based packaging in the first place, since plastic packaging is used frequently in our everyday lives (extract 6).

Secondly, such a policy takes time and is deemed as a long term approach that will only correct the market failure in the long run.



Evaluation:

Overall, whether excise tax is the best policy depends on the **root cause** of the problem. If the **root cause of the overconsumption of plastic packaging is the reliance on bottled water as mentioned in extract 1 and 6**, then excise tax may not be the best policy as it does not reduce reliance on bottled

**water.** Instead, the government should try to solve the root cause of the problem, which is to reduce reliance on bottled water by making tap water fit for consumption. This could include cleaning up of the polluted water bodies (extract 6). This would shift the taste and preferences away from bottled water towards tap water, leading to a fall in consumption of bottled water, and improving allocative efficiency.

Level	Description	Marks
L3	<p><b>Well-developed explanation</b> (i.e. with at least one limitation) of the effectiveness of at least two policy options(excise tax and one other policy) in promoting allocative efficiency, with use of case study evidence and diagrammatic analysis</p> <p><i>Maximum of 6 marks will be awarded for 2 well-explained policies with no limitations.</i></p>	6-9
L2	<p>A <b>well-developed one-sided</b> explanation of how the excise tax can promote allocative efficiency, with one limitation, with use of case study evidence and diagrammatic analysis.</p> <p><i>Maximum of 5 marks will be awarded for one well-developed policy + its limitation.</i></p> <p>OR</p> <p>An <b>undeveloped</b> explanation of how two policy options(excise tax and one other policy) can promote allocative efficiency, with little use of case study evidence and/or diagrammatic analysis.</p>	3-5
L1	Smattering of valid points.	1-2

In addition, up to a **further 3 marks** for valid evaluative comment. This should focus on the effectiveness of policy options.

**[CSQ 2]****(a) Compare the economic growth rates between China and India from 2012 to 2016. [2]**

China's economic growth rates were higher than India in 2012 and 2013 [1] and India's economic growth rates were higher than China from 2014 to 2016 [1].

Note: Both countries registered positive growth rates [1] also acceptable.

**(b) With reference to Table 1, discuss the extent to which the data reflects that China has a higher standard of living than India. [8]**

Standard of living is a broad concept that refers to the level of well-being of a typical individual within the country. It encompasses both the material and non-material aspects of life.

GDP per capita at PPP measures the value of the final G+S that is produced by an average resident of the country after taking into account the cost of living in the country & purchasing power of the currency.

As Table 1 shows a higher GDP per capital at PPP in China, this means that the consumers in China have a higher ability to consume goods and services as compared to India. Also, Table 1 shows that life expectancy is longer in China than in India, this could be attributed to better quality of healthcare in China. Hence, since the people in China can consume more and better goods and services, material standard of living is higher in China. PM10 is lower in China which means that the quality of air in China is better than in India, indicating a higher non-material standard of living in China. Together, it can be concluded that both non-material and material standard of living in China is higher than in India.

However, to have a more accurate assessment, other information on material and non-material aspect of SOL are needed. For instance, information on Gini coefficients of the 2 countries were not given. This is because GDP does not give indications of income disparity within a country, making it difficult to compare standard of living between countries. Even though China has a higher GDP per capita at PPP than India, the level of income inequality could be worse than India. This suggest that bulk of the national income is concentrated in the hands of the rich minority and as such, standard of living in China will not be higher.

**Evaluation**

*However, there could be problems with data collection. This is because real GDP per capita at PPP does not record the output of certain goods and services and the size of this non-monetized sector varies from country to country. For instance, India may have a larger subsistence agriculture sector than China and these sectors are usually not recorded in the national income, thereby understating the level of national income in the country. As such, the difference in the size of such non-monetized sectors will cause the comparison of living standards to be inaccurate. Therefore, it is to a large extent that the data reflects a higher standard of living in China than in India and more information is required to corroborate a more comprehensive assessment of standard of living between the two countries.*

L2	<p>A <b>developed</b> discussion of how the data reflects a higher standard of living in China than in India</p> <p>Developed discussion should include</p> <ul style="list-style-type: none"> <li>• Material and non-material SOL</li> <li>• Either 1 of the following points <ul style="list-style-type: none"> <li>○ Limitations of using NY figures to measure SOL</li> <li>○ Measurement problems</li> <li>○ Other information required and why</li> </ul> </li> </ul>	4-6
L1	<p>A <b>developed one-sided</b> response on how data reflects a higher standard of living in China than in India OR An <b>undeveloped</b> discussion on how the data reflects a higher standard of living in China than in India.</p>	1-3

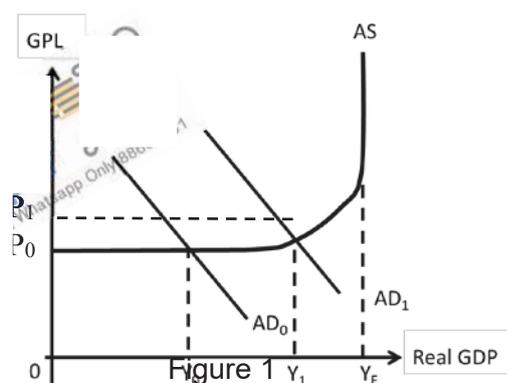
In addition, up to a **further 2 marks** for valid evaluative comment. This should focus on assessing the extent which the data reflects that standard of living is higher China than in India.

**(c) Using AD/AS diagrams, discuss the likely effects of the implementation of the GST on the economy of India. [8]**

The effects of the implementation of the GST on the economy will be examined based on the macroeconomic objectives of the government – economic growth, price stability and level of unemployment.

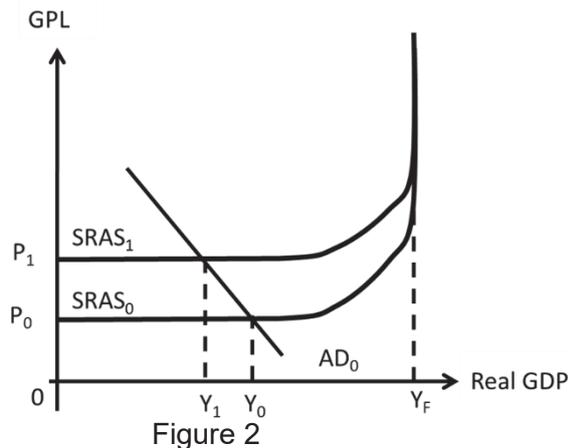
Extract 1 mentioned that there were different tax levels in different states in India prior to the implementation of the GST. As such, the implementation of the GST will help to reduce red tapes and hence make it easier for firms to invest and hence investment expenditure will increase. AD will increase, shifting rightwards from  $AD_0$  to  $AD_1$  in Figure 1, causing a multiple change in real national income via the multiplier effect and general price level increase from  $P_0$  to  $P_1$ . The increase in production of goods and services will also increase the derived demand for labour, thereby reducing unemployment level.

Note to marker: [analysis should follow diagram. Mark accordingly to what students write for GPL]



However, the implementation of the GST may increase the cost of production for the firms assuming that the GST is lower than the previous tax levels. As such SRAS will decrease from

SRAS<sub>0</sub> to SRAS<sub>1</sub> in Figure 2. Prices will increase from P<sub>0</sub> to P<sub>1</sub>, real national income will fall from Y<sub>0</sub> to Y<sub>1</sub> and there will also be a rise in unemployment level.



Evaluation (any 1 of the points below)

① *The extent of the increase in national income brought about by an increase in investment depends on the state of the economy. If the economy is nearing full employment, there will be no/ insignificant change in real national income and instead, demand-pull inflation may set in due to the increase in competition for scarce resources, thereby bringing about negative effects on the economy.*

② *It is seen from Table 1 that the growth of the Indian economy has slowed to a four-year low in 2017, which implied that GDP were rising albeit at a slower rate. Hence, it can be deduced that fall in real national income due to an increase in cost of production was smaller than the increase in real national income due to an increase in investment.*

L2	A <b>developed</b> discussion on how the implementation of the GST will impact the Indian economy Developed discussion should include <ul style="list-style-type: none"> <li>• Positive and negative effects of the GST on the 2 out of the 3 macro goals of the government</li> <li>• 2 well-explained diagrams (one shows an increase in AD whereas the other shows a decrease in SRAS)</li> </ul>	4-6
L1	A <b>developed one-sided</b> response on how the implementation of the GST will affect the various macro objectives of the government in India. OR An <b>undeveloped</b> discussion on how the implementation of the GST will affect the various macro objectives of the government in India.	1-3

In addition, up to a **further 2 marks** for valid evaluative comment. This should focus on weighing the effects of how the implementation of the GST might impact the Indian economy positively or negatively.

(di) **Extract 2** mentioned that reducing interest rates can 'bring relief to these ailing sectors of the economy'.

**Explain** how a fall in interest rate can 'bring relief to these ailing sectors of the economy'. [2]

A decrease in interest rate will decrease the cost of borrowing [0.5], especially for big-ticket items [0.5] such as cars. As such, consumption expenditure may rise. Similarly, the projects which were previously unviable now becomes viable [0.5] since interest rate is now lower than the expected rate of returns [0.5]. As such investment expenditure will rise. As a result, the increase in AD will cause a multiple increase in the national income of India.

Hence, the fall in interest rate can bring relief to the ailing domestic sectors of the economy.

**(dii) Explain two factors that will determine the impact of the above approach on the national income of India. [4]**

The extent of the cut in interest rate can determine the impact on the national income of India. If the cut in interest rate is significant, then the cost of borrowing will fall significantly, and this will motivate the consumers and producers to consume and invest more. With a greater increase in AD, the change in national income will also be greater.

The size of multiplier can also determine the impact on the national income. Given an increase in AD due to a fall in interest rate, the change in national income will result in a multiple increase in income. For example, if the size of  $k$  is small, possibly due to a large marginal propensity to save or import, then the multiple increase in national income will be smaller.

Another possible factor could be the level of market sentiments. Although the cost of borrowing might have been reduced, consumers and investors might remain pessimistic about the situation and do not consume and invest. This will result in a smaller than expected increase in the consumption and investment expenditure, leading to a smaller than expected increase in national income of India.

**(e) Explain how the devaluation of the Chinese Yuan will affect net exports in China. [4]**

The devaluation of the Chinese Yuan will cause the price of exports in foreign currency to decrease [1] while the price of imports in domestic currency to increase [1]. Assuming Marshall-Lerner Condition (MLC) holds i.e.  $PED_x + PED_m > 1$  [1], net exports will increase [1].

**(f) Explain two reasons why China is shifting her economy away from a reliance on investment and exports to consumption and one possible unintended consequence that might arise. [6]**

If the Chinese economy is too dependent on exports and investment, the country will be vulnerable to external shocks. Should anything happen to the other countries, China will risk being significantly affected, thereby causing AD to fall by a large extent, NY and unemployment will be impacted on a larger scale as well. Hence, there is a need to shift away from a reliance on investment and exports to the domestic consumption of China, so that she is less susceptible to any external shock.

Secondly, as highlighted in Extract 3, China is the fastest growing consumer market in the world and they are expected to power the next phase of growth for China. Given this immense amount of potential that the consumption sector have for China, they should capitalize on it and seek to devote more resources towards the development of this sector and produce more goods and services for the consumers in China. The higher level of domestic consumption might be able to help the economy withstand any external shock more effectively. Furthermore, the government can more effectively target policies towards domestic

consumers as compared to boosting the consumption of the foreigners, which will be more difficult to manage.

The unintended consequence is such that the fall in investment will limit the increase in the quantity/ quality of capital in the economy, thereby limiting potential growth.

**(g) 'Many countries slowed their reforms after the international financial crisis, but China still pressed ahead with tax cuts and improved education and training.'**

**Discuss whether supply-side policy through tax cuts is the most appropriate policy to achieve sustainable growth in China. [11]**

Sustainable growth indicates a rate of growth that can be maintained without creating other significant economic problems (e.g. resource depletion, environmental degradation, and rapidly rising prices), particularly for future generations. This includes achieving sustained economic growth by increasing the AD alongside the LRAS.

Explain how tax cuts achieve sustainable growth

Cutting corporate income tax, after-tax profits will increase and firms will have more funds available for investment and to undertake R&D. Cutting personal income tax will increase the attractiveness for the existing workforce to work longer hours given the higher disposable income. It will also attract more people such as the housewives and retirees to re-enter the workforce.

These measures will increase the quantity of labour as well as the quality and quantity of capital which will bring about an increase in the productive capacity of the economy, allowing the economy to achieve potential growth.

The increase in after-tax profits from the fall in corporate income tax also meant that investment expenditure increase and AD will increase, thereby leading to actual growth. In addition, the cut in corporate income tax may incentivise firms to invest more in green technology which help to reduce the emissions of major pollutants (Ext 5).

Together, the increase in actual growth, potential growth and the reduction in the emissions of major pollutants will enable China to achieve sustainable growth.

Limitations of tax cuts (any one of the following)

- However, Ext 4 mentioned that China had only averaged 6-9% of growth in the past six years and many have a pessimistic outlook on the economy. As such, firms may expect to sell less and thus unwilling to invest despite the cut in corporate income tax.
- Moreover, reducing corporate tax may result in firms paying higher dividends rather than undertaking more investment.
- Also, personal income tax cuts do not guarantee that people will actually work more since they may find themselves able to afford the same amount of goods and services with fewer hours of work and hence respond by working less. As such, the long-term improvement in the productive capacity of the economy may not materialise and sustainable growth cannot be achieved.

Explain how another policy may achieve sustainable growth - Improved education and training

The government may also provide education, training programmes and schemes to increase the quality of the workforce. This increase in the quality of labour will increase the productive capacity of the economy, thereby achieving potential growth.

The increase in government expenditure will also increase AD, thus achieving actual growth.

Together, the pursue of potential growth and actual growth through improved education and training will lead to sustained growth.

Limitation of improved education and training (any 1 of the following)

- Effectiveness of improving education and training hinges largely on the attitude and aptitude of workers. The less educated or older workers may not have the ability to learn new skills and the more educated ones may not be receptive towards the need for re-training.
- Ext 5 suggests that China was having a fiscal deficit. If the government has to borrow to finance the expenditure on education, the demand for loanable funds will increase and may crowd out private investment and consumption, thereby affecting actual growth.

Evaluation

The breadth of the notion of sustainable growth warrants a multi-pronged approach for China to successfully achieve sustainable growth. For instance, the cut in corporate income tax does not guarantee that firms will invest more in greener technology and this means that the government may require other micro policies such as quotas, Pigouvian tax or regulations to curb pollution level in order to achieve sustainable growth. Besides, the increase in the use of higher quality of capital due to tax cuts may lead to the unintended consequence of higher structural unemployment. Improved education and training will ensure that the workforce are able to tap on the capital to achieve potential growth. As such, the different features of the various policy will complement each other in order for China to successfully achieve sustainable growth.

L3	A developed discussion about the policies which can bring about sustainable growth in China. Developed discussion should include: <ul style="list-style-type: none"> <li>• How tax cuts &amp; another policy work to increase actual and potential growth</li> <li>• How tax cuts may reduce emissions of pollutants thereby leading to sustainable growth</li> <li>• Limitation of the policies</li> </ul>	6-9
L2	A developed one-sided explanation on how the policies work to bring about sustainable growth in China. OR An undeveloped discussion on how the policies work to bring about sustainable growth in China	3-5
L1	An Undeveloped explanation about the structural reforms in China	1-2

In addition, up to a **further 3 marks** for valid evaluative comment. This should focus on assessing which is the most appropriate policy to achieve sustainable growth in China.





ST ANDREW'S JUNIOR COLLEGE

PRELIMINARY EXAMINATIONS 2019 (JC2)

General Certificate of Education Advanced Level

Higher 1

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**ECONOMICS**

**8823/01**

**Paper 1**

**2 September 2019**

**3 hours**

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**READ THESE INSTRUCTIONS FIRST**

Write your name and class on all the work you hand in.

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

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

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

Answer **all** questions.

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

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**This document consists of 7 printed pages.**

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**[Turn Over]**

Answer all questions.

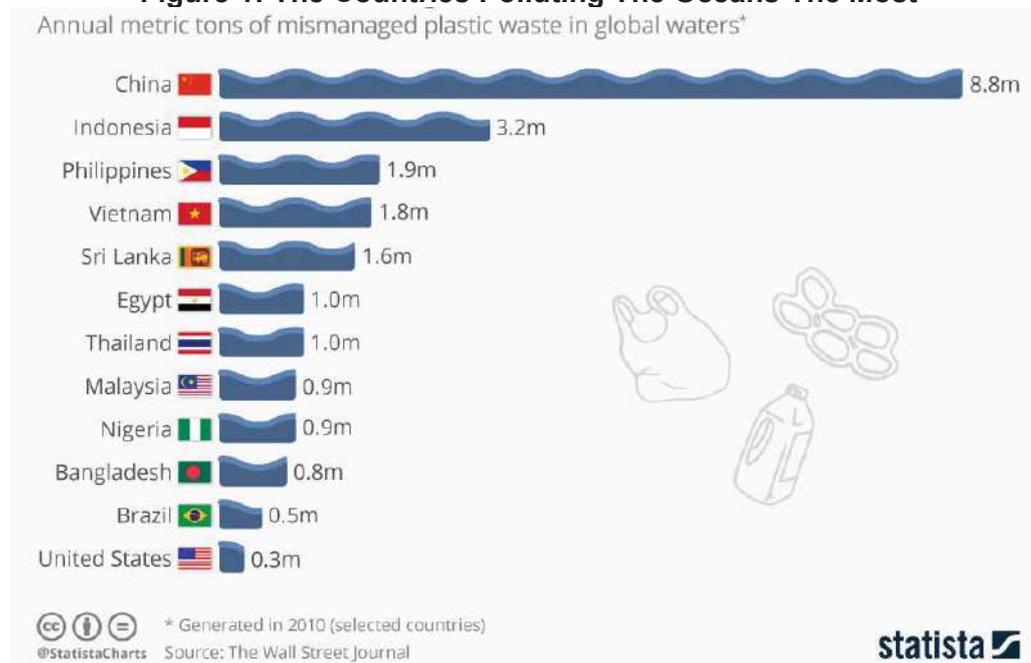
### Question 1: Love-Hate Relationship with Plastics

**Table 1: World Plastics Output and World GDP (Annual changes, %)**

	2012	2013	2014	2015	2016	2017
World Plastics Output	3.2	3.8	4.0	3.5	4.0	3.9
World GDP	2.5	2.6	2.8	2.8	2.5	3.1

Source: Plastics Europe, World Bank

**Figure 1: The Countries Polluting The Oceans The Most**



Source: The Wall Street Journal, accessed 18 Jun 2019

#### Extract 1: Plastics – from friend to foe

I remember as a kid getting potato chips in a box, with a bag inside, and getting deodorant in a steel spray can. Now, I get both in plastic. Have you ever stopped to ask, why do we use so much plastic, especially in packaging? The answer depends on the type of packaging, but one overriding answer is that plastic is more resource-efficient than its competing materials. In other words, it takes less energy and materials to do the job. Less energy means less money, and less money means that it is often the desired choice for a given good.

With plastic and other materials, we get waste. Some of it we recycle and most of it we do not, or cannot. In today's world of knee-jerk reactions, banning plastic packaging items altogether requires careful thinking, especially as it relates to climate impacts. As with most sustainability questions, the simplest answer is often incorrect, environmentally speaking. The correct answer will depend on a number of factors — do we need to use the item in the first place, are there ways to use less of it, and are the alternatives really better?

Adapted from <https://www.greenbiz.com/> 18 Sep 2018

### **Extract 2: Price of plastic falls as demand in China slows**

The prices of commonly used plastics have fallen sharply since last summer, as a surge in supply from new plants coming on stream in the US has met flagging demand growth, particularly in China. The fall in prices of plastic is putting pressure on chemicals producers, which feed plastic-producing companies with the necessary raw materials for plastic production.

Adapted from <http://ft.com/> 04 Mar 2019

### **Extract 3: Adverse Effects Of Plastic Bags On Land**

Plastic shopping bags represent a large part of plastic pollution on land. Single use plastic bags are easily blown by wind and carried long distances before getting stuck in trees or going into storm drains. If plastic bags do end up in storm drains they are carried out to sea or they contribute to clogging them. Clogged storm drains can lead to flooding during large rains and create big areas of standing water, which are breeding grounds for disease carrying insects, like mosquitoes.

Source: <https://greentumble.com/> accessed on 18 Jun 2019

### **Extract 4: Cut use with mandatory tax**

A Straits Times online poll had more than 75 per cent of over 4,700 respondents supporting a plastic bag tax. But many others spoke out vehemently against it on social media. Plastic bags should be given out for free, detractors say, for two main reasons: The bags are needed for bagging trash; and the lower-income group may be adversely affected by such a tax. If the bags are not given out for free, people may simply throw pollutive food waste directly into the common chute, turning it into a hot spot for cockroaches and other pests, they claim.

But as Mr Louis Ng, an MP for Nee Soon GRC, points out, a plastic bag tax is not a plastic bag ban. People would still be able to get bags for their trash. He said: "Many people forget that the first step of the 3Rs is to reduce... If people are charged for plastic bags, they may try to reduce the number of bags they get at the counter."

Moreover, not all trash needs to be bagged. "If we separate recyclables from organic food waste, we will find that most of the waste would go into the recycling bin - which you don't need to bag," said Mr Tay, executive director of Zero Waste SG. In the long run, it is vital to help consumers recognise that the slight inconvenience is a small price to pay for the sake of the environment.

On how lower-income groups will be affected by a plastic bag tax, experts say it depends on how much the levy is. At 10 cents per bag, calculations by Zero Waste SG show that the surcharge would make up just 0.35 per cent of the annual income of a household living in a one-or two-room Housing Development Board flat.

Adapted from <https://www.straitstimes.com/> accessed on 20 Jun 2019

### **Extract 5: Winners and losers of plastic ban**

Supermarkets and other retail outlets in Kenya are among the biggest beneficiaries of a ban on plastic bags, which took effect on Monday. The outlets are currently selling to their customers the alternatives that include canvas bags creating a new revenue stream. Since the ban, each outlet has been selling the shopping bags from US\$0.05 for the light canvas bags to US\$0.50 for the heavy canvas bags. And with hundreds of customers thronging into the retail outlets every day, the canvas bags are becoming a cash cow for the outlets.

In March, New York became the second state to ban plastic bags as a way to protect the environment. Far from weening New Yorkers off hazardous single-use plastics, the ban may actually be encouraging them to instead use thicker garbage bags. A study from the University of Sydney found that while plastic bag ban got rid of its target, the ban did not eliminate people's need for plastic bags: They still needed something to line their garbage cans or pick up after their pets. Prior to bag ban, this could mean just reusing the bags you carried your groceries home in. After the ban, folks turned to purchasing garbage bags, which are much more plastic-intensive. The study found that after the imposition of the bag ban, sales of small garbage bags increased by a full 120 percent.

Adapted from <https://www.newtimes.co.rw/> 30 Aug 2017, <https://reason.com/> 11 Apr 2019

### Questions

- (a) (i) Using Table 1, compare the growth in world plastics output and growth in world GDP. [2]
- (ii) The US and China are the world's two largest economies. Suggest a policy that could explain the disparate data on **mismanaged plastic waste** in these two countries as shown in Figure 1. [1]
- (b) Using Extract 1 and a relevant concept or diagram, explain how, over the past decades, plastics became a 'friend' to:
- (i) profit-maximising firms; [3]
- (ii) an economy trying to achieve potential economic growth. [3]
- (c) Using Extract 2 and a demand and supply diagram, explain the fall in price of plastics. [4]
- (d) (i) Define price elasticity of demand (PED). [1]
- (ii) Using Extract 4, explain the likely PED value of a plastic bag. [2]
- (e) "In the long run, it is vital to help consumers recognise that the slight inconvenience is a small price to pay for the sake of the environment." (Extract 4) [2]
- Explain whether the above is a positive or normative statement.
- (f) Explain how the use of plastic bags could bring about allocative inefficiency and comment briefly on the likely extent of such an inefficiency in the future. [7]
- (g) With the use of a diagram and with reference to Extract 5, explain and comment on the likely effects on the market for canvas bags when a ban on plastic bags is imposed in Kenya. [8]
- (h) With reference to case materials and/or your own relevant knowledge, discuss whether public education on the harmful effects of plastic pollution is effective in correcting the market failure it creates. [12]

**[Total: 45 marks]**

## Question 2: Economic Challenges and Opportunities for Australia, Vietnam and Spain

**Figure 2: Australia's Inflation Rate**

	2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3
<b>Inflation Rate (%)</b>	<b>1.0</b>	<b>1.3</b>	<b>1.5</b>	<b>2.1</b>	<b>1.9</b>	<b>1.8</b>

**Source: Reserve Bank of Australia**

### **Extract 6: Is Australia's Employment Situation Improving?**

Australia's unemployment rate has fallen to a four-year low, with the labour market recording 12 straight months of employment gains – its longest stretch since 1994.

Figures show the unemployment rate fell to 5.5% in September, its lowest rate since March 2013, as the government's National Disability Insurance Scheme contributes to a surge in health jobs. Other big services sectors such as education, retail, accommodation/tourism and transport had added nearly 400,000 new jobs over the past year. This is a significant turnaround from a few years ago where the downturn in mining led to the loss of jobs in both the mining industry and industries that are involved in the processing of the mining output. The fall in Australia's key exports led to the government pouring funds towards stimulating investment into the Australian economy.

HSBC chief economist Paul Bloxham said businesses were reporting a sharp jump in their concerns about being able to find "suitable labour", which is a sign that the labour market is tightening and wages may finally start facing modest upward pressure over the next 12 months. "We expect to see at least another 250,000 jobs added over the coming year," CBA senior economist Michael Workman said. "The unemployment rate, now at 5.5%, is forecast to move closer to the 5% level." The employment minister, Michaelia Cash, welcomed the employment figures, saying they proved the Coalition's policies were pro-growth.

However, critics are quick to point out that unemployment rate has remained fairly unchanged since the election of the current government at 5.5 per cent despite the creation of jobs as many Australians are without the requisite skills for the modern Australia economy. They are calling for the government to provide more resources to vocational skills training, school education and reducing university fees.

Adapted from The Guardian, 19 Oct 2017

### **Extract 7: Vietnam benefits from US-China Trade War**

Foreign direct investment in Vietnam climbed 9.1% in 2018 to reach \$19.1 billion, the government reports, marking a sixth straight annual record as capital keeps flowing into one of Southeast Asia's fastest-growing economies. Industries such as apparel have been moving production out of China and into Vietnam looking to escape the higher taxes by the U.S. on Chinese exports. A prolonged trade war is expected to accelerate this shift. In addition, apparel companies are shifting their production out of China to countries like Vietnam due to its rising labour costs, making Vietnam the world's third largest apparel exporter. Apparel accounts for about 10% of Vietnam's exports.

Vietnam is Asia's biggest beneficiary of the Sino-U.S. trade war, according to Mizuho Research Institute, which estimates the effect will be a 0.5 percentage point boost to its real

gross domestic product. Vietnamese real GDP growth is estimated at 7.08%, according to government data.

The central government approved many investment projects last year, including the Hanoi "smart city" project, in which Japanese trading house Sumitomo Corp. takes part, as well as liquid crystal display and camera facility investment by South Korea's LG group in the North-Eastern city of Hai Phong. South Korea's Samsung Electronics accounts for roughly 25% of Vietnam's overall exports by value.

However, with the growth of the garment and electronics industry in Vietnam comes with it a cost to the environment. Research has shown that garment industry is the 2<sup>nd</sup> most pollutive industry globally, using up precious natural resources and creating a lot of waste products that dirty the land, water and air. Environmental groups are calling for the Vietnamese government to do more to mitigate the environmental effects of the foreign investment. The rapid growth of exports has also caused a widening income gap between those in export-related industries and those who primarily cater to the domestic market.

Adapted from Nikkei Asian Review, 10 Jan 2019

### **Extract 8: Spain's unemployment falls without an active government**

We are continually told that every country must have an activist government that intervenes with a range of policies to achieve its economic goals. No economy or society can be allowed to just bumble along by itself, the firm smack of political control is necessary for the world to continue to turn on its axis. This is not really what the empirical evidence tells us of course. Spain has not really had a government for the past 10 months and yet it is expected to be one of the fastest-growing Eurozone economies this year. Spain's central bank expects the country to expand by 3.2% this year, among the most robust growth rates in Europe, which has created more jobs. And as a result the unemployment rate has just fallen to 18.9%. While inflation is -0.2%, it is an improvement from -0.5% a year ago.

As more Spaniards have gone back to work, they have been spending more, boosting consumer spending and further accelerating economic growth. Spain has been expanding since the economy returned to growth in 2013 after a deep recession.

In addition, the growth may spark off higher migration to Spain in search for job opportunities. While generally welcoming to migrants, some are worried that these migrants may steal jobs from the locals due to their lower asking wage. However, some economists are more optimistic, citing empirical evidence that having an increased inflow of migrants can bring about faster growth.

However, analysts are cautious about the optimism as the better than expected performance is due to the global economic recovery which has led to more tourists in Spain and increasing demand for Spain's exports. Robust growth may bring with it the harms of high inflation. Without a government, Spain is ill-equipped to deal with any potential recessions and political instability would affect its long-term growth prospects.

Adapted from Forbes.com, 27 Oct 2016

**Questions:**

- (a) With reference to Figure 2, describe what has happened to the rate of inflation and price level in Australia. [3]
- (b) Explain 2 possible reasons why governments aim to achieve the goals of low unemployment and price stability. [4]
- (c) (i) With reference to Extract 6, explain the causes of unemployment in Australia. [4]
- (ii) Discuss whether the implementation of policies with regard to training and education will be sufficient in further reducing the unemployment rate in Australia. [8]
- (d) “Industries such as apparel are... looking to escape the higher taxes by the U.S. on Chinese exports” and “... shifting their production out of China to countries like Vietnam due to its rising labour costs” (Extract 7). [7]
- Explain how the abovementioned events have impacted the living standards of the residents of Vietnam.
- (e) Extract 8 tells us that Spain’s economy grew without a government. Explain how Spain was able to do so and comment on whether there is a need for an activist government in order to ensure sustainable growth. [7]
- (f) With reference to the case material and/or your own knowledge, discuss the factors that a government should consider when deciding on the policies to achieve its economic goals. [12]

[Total: 45 marks]

~End of Paper~





ST ANDREW'S JUNIOR COLLEGE

PRELIMINARY EXAMINATIONS 2019 (JC2)

General Certificate of Education Advanced Level

Higher 1

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**ECONOMICS**

**8823/01**

**Paper 1**

**2 September 2019**

**Suggested Answers w Examiners' Comments**

**3 hours**

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**READ THESE INSTRUCTIONS FIRST**

Write your name and class on all the work you hand in.

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

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

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

Answer **all** questions.

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

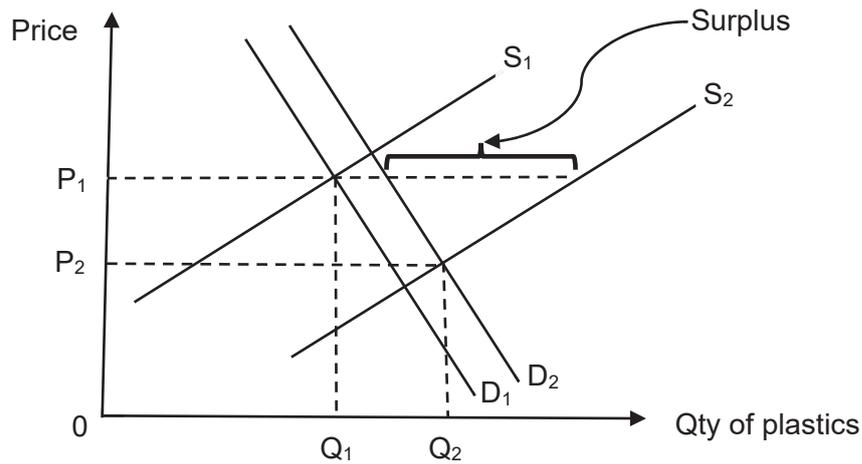
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## Question 1: Love-Hate Relationship with Plastics

(a)	(i)	Using Table 1, compare the growth in world plastics output and growth in world GDP.	[2]
		<b>Suggested Answer:</b>  <b>Similarity [1]:</b> - Both were positive throughout the period.  <b>Difference [1]:</b> - Growth in plastic output exceeded the GDP growth throughout the period.	
	(ii)	The US and China are the world's two largest economies. Suggest a policy that could explain the disparate data on <b>mismanaged plastic waste</b> in these two countries as shown in Figure 1.	[1]
		<b>Suggested Answer:</b>  Any policy that suggests the US disposes of much less <b>mismanaged plastic waste</b> [1]: (i) Aggressive promotion of recycling efforts (ii) Strict rules against indiscriminate disposal of plastic waste	
(b)		Using Extract 1 and a relevant concept or diagram, explain how, over the past decades, plastics became a 'friend' to:	
	(i)	profit-maximising firms;	[3]
		<b>Suggested Answer:</b>  <b>Suggested Answer:</b> <u>Profit = Total Revenue – Total Cost</u> [1m for identification of concept]  Plastics which is more resource-efficient is a cheaper alternative to other packaging materials. <u>Firms which switched to plastic packaging materials would enjoy lower cost of production, ceteris paribus.</u> [1]  Hence, plastics became a friend to profit-maximising firms as given <u>unchanged total revenue</u> and lower total cost, <u>firms were able to earn higher profits</u> . [1] over the past decades since Profit = Total Revenue – Total Cost.  <b>Alternative Suggested Answer</b> <b>Concept:</b> Marginalist principle Assume firms are rational profit maximisers. They will weigh the marginal benefit (MB) against the marginal cost (MC) in making rational decisions and <u>maximise profit by producing the output level when MC = MB.</u> [1]  Plastics which is more resource-efficient is a cheaper alternative to other packaging materials. <u>Firms which switch to plastic packaging materials enjoy lower cost of production [1] and lower marginal cost (MC).</u>	

	<p>At the original quantity of output, <u>MB exceeds MC</u> and <u>additional unit of output adds to the profits</u>. <u>To increase profits to the maximum, the firms increase the quantity of output until new MB = new MC</u>. [1]</p> <p>Hence, plastics became a friend to profit-maximising firms as they switch to plastics and are able to enjoy more profits.</p>	
	(ii) an economy trying to achieve potential economic growth.	[3]
	<p><b><u>Suggested Answer:</u></b></p> <p><b><u>Suggested Answer:</u></b>  <b><u>Concept</u></b> : Long Run Aggregate Supply/ Production Possibility Curve  <u>LRAS</u> is the total output firms in an economy can produce when it is at full employment. [1]  OR  <b><u>Concept:</u></b> Production Possibility Curve (PPC)  A <u>production possibility curve (PPC)</u> shows the maximum possible combinations of 2 goods an economy can produce when all resources are fully and efficiently employed. [1]</p> <p>As plastic is more resource-efficient than other packaging materials, many firms switched to plastic packaging. This <u>increased efficiency in their production processes</u> which <u>freed up resources that can be used to produce more other goods and services</u>. [1] An <u>increase in the productive capacity of the economy</u> and a <u>rightward shift in the LRAS (or PPC)</u> resulted [1] <u>and potential growth ensued</u>.</p> <p>Hence, plastics became a friend to an economy trying to achieve potential growth.</p>	
	(c) Using Extract 2 and a demand and supply diagram, explain the fall in price of plastics.	[4]
	<p><b><u>Suggested Answer:</u></b>  Increase in supply [1]:</p> <ul style="list-style-type: none"> <li>- 'Surge in supply from new plants' implies that more output is being produced. At each price, plastic producers are willing and able to sell more plastics.</li> </ul> <p>Increase in demand [1]:</p> <ul style="list-style-type: none"> <li>- Demand for plastic is growing slowly particularly in China who is <b>presumably a dominant consumer</b> of plastic given its huge economy and <b>relative high growth rate</b>. Hence, at each price, there is now a <b>slower rise in quantity demanded</b> for plastics.</li> </ul> <p>Price adjustment process [1]:</p> <ul style="list-style-type: none"> <li>- At original price, <math>OP_1</math>, there is now excess supply. Downward pressure on price occurs as producers attempt to clear their unsold inventories. New equilibrium price stable at <math>OP_2</math>, where <math>Q_d = Q_s</math> once again.</li> </ul> <p>Diagram [1]</p>	



**Note:** PED/PES analysis not required due to limited marks available.

(d) (i) Define price elasticity of demand (PED). [1]

**Suggested Answer:**

PED refers to the degree of responsiveness of quantity demanded for a good to a change in its own price, ceteris paribus.

**Note:** No mark awarded without underlined key words. No formula needed.

(ii) Using Extract 4, explain the likely PED value of a plastic bag. [2]

**Suggested Answer:**

Likely to be less than one. [1] Even at 10 cents per bag, the charge will only make up 0.35% of annual income of a low-income household in Singapore. Since the price of plastic bags takes up only a small proportion of households' income, many households will be able to bear the increase in the price of plastic bags, leading to a less than proportionate decrease in quantity demanded of plastic bags, ceteris paribus. [1]

**Note:** PED value of plastic bag will be even lower in the eyes of an average Singapore household.

(e) "In the long run, it is vital to help consumers recognise that the slight inconvenience is a small price to pay for the sake of the environment." (Extract 4) [2]

Explain whether the above is a positive or normative statement.

**Suggested Answer:**

The above is a normative statement [1] as it is based on the opinion (or value judgement) of the author of the article. Whether it is vital or not could be debatable among policymakers as well as the public and the statement cannot be objectively verified to be true or false by examination of facts. [1]

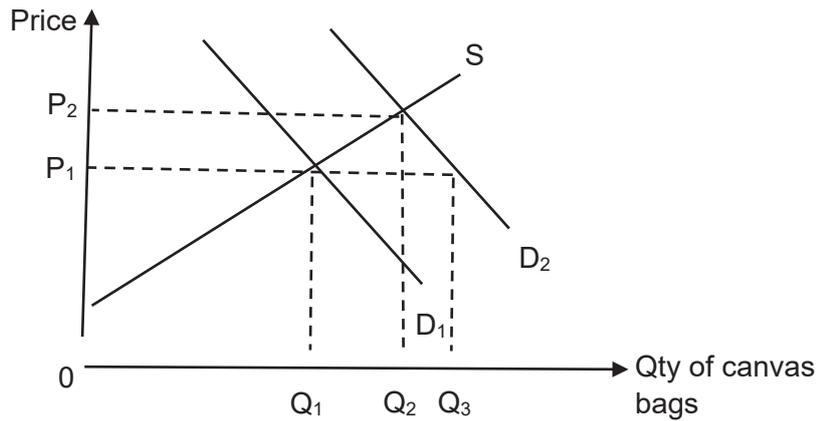
(f)	Explain how the use of plastic bags could bring about allocative inefficiency and comment briefly on the likely extent of such an inefficiency in the future.	[7]
	<p><b>Suggested Answer:</b></p> <p>Explain Allocative Inefficiency [5]</p> <ol style="list-style-type: none"> <li>1. Establish <math>Q_p</math> (<math>MPB = MPC</math>) in order to maximise private welfare.</li> <li>2. Introduce negative externality (Ext 3) <ul style="list-style-type: none"> <li>– 3<sup>rd</sup> party (party not involved in the consumption of the good/service) e.g. Households living near flood-prone area</li> <li>– Monetise the external cost e.g. loss of property and lives due to the flood caused by clogged drains.</li> </ul> </li> <li>3. Establish <math>Q_s</math> (<math>MSB = MSC</math>) in order to maximise social welfare.</li> <li>4. As <math>Q_s &lt; Q_p</math>, there is hence an overconsumption of plastic bags. Society over-allocated resources into the production of plastic bags for consumption.</li> <li>5. <math>DWL =</math> shaded area.</li> </ol> <p>Comment [2]:</p> <ol style="list-style-type: none"> <li>1. Immediate future <ul style="list-style-type: none"> <li>– From Table 1, continued world economic growth will mean higher consumption of plastics. Hence, there is likely a greater MEC for additional plastic bag consumed due to the increased severity of flooding, etc.</li> </ul> </li> <li>2. Longer term effects <ul style="list-style-type: none"> <li>– If <b>global awareness</b> programmes are successful in reducing plastic bag consumption, <math>DWL</math> might stop growing or even start to diminish over time.</li> </ul> </li> </ol> <p><b>Note:</b> Any other reasonable comment will be accepted, there is no need to consider immediate vs long term future.</p>	
(g)	With the use of a diagram and with reference to Extract 5, explain and comment on the likely effects on the market for canvas bags when a ban on plastic bags is imposed in Kenya.	[8]

**Suggested Answer:**

Canvas bags and plastic bags are substitutes as they satisfy similar wants. [1]

A ban on plastic bags will lead to increase in demand for canvas bags - at each price, the quantity demanded for canvas bag will increase due to increased willingness and ability to buy them by consumers. [1] Demand curve shifts from  $D_1$  to  $D_2$ . Assume that there is no change in the supply of canvas bags.

## Diagram [1]



At original equilibrium price of canvas bags, there is now a shortage ( $Q_3 > Q_1$ ). Consumers will bid up the prices of canvas bags in order to incentivise higher output produced. Such upward pressure on price will eventually bring forth a new equilibrium price at  $P_2$ , whereby  $Q_d = Q_s$  [1] at  $0Q_2$ . Hence, there will be a rise in equilibrium price and quantity of canvas bag when the ban on plastic bags is imposed. [1]

**Comments [3]:**

- In the long run, demand for heavy canvas bags may fall as consumers are unlikely to continue to demand for them after having previously bought them for their use. Hence, the overall change in the price of the heavy canvas bag will depend on the overall increase in demand in the long run. If there is a net increase in demand, there will still be a rise in price of the heavy canvas bags.
- The above also assumes that there is no change in supply of heavy canvas bags. Given the increased scale of production to meet rising demand, producers may be able to reduce the cost per unit of canvas bag, leading to a rise in supply. This may therefore exert downward pressure on the price of heavy canvas bags.

(h) With reference to case materials and/or your own relevant knowledge, discuss whether public education on the harmful effects of plastic pollution is effective in correcting the market failure it creates. [12]

**Suggested Answer:****Introduction**

Public education is one policy which could help correct market failure. Due to various reasons, implementing public education may not be effective in correcting market failure caused by plastic pollution.

### **Body**

**Thesis** – Public education is effective in correcting market failure:

Educating the public about the harmful effects of plastic pollution will be useful in helping to correct the market failure. As consumers do not fully appreciate the harm that their own consumption of plastic brings, they tend to overconsume them. For example, the microplastic pollution due to dumping of mismanaged plastic into the ocean gets ingested by marine life. In turn, human beings, most of whom would also be the very ones dumping plastic into the ocean themselves, consume such marine life. Overtime, the accumulation of microplastic in the human body may lead to organ damage. Due to imperfect information about the true marginal private cost ( $MPC_{true}$ ) of consuming plastics, the perceived marginal private cost ( $MPC_{perceived}$ ) is lower than the true marginal private cost of consuming plastic. As a result, if left to free market forces, the actual consumption of plastic would occur where  $MPC_{perceived} = MPB$ . This actual consumption of plastic is higher than the socially optimal level of output where  $MSC = MSB$  (assuming no externalities). Hence, to reduce overconsumption caused by imperfect information, educating the public may reduce the consumption of plastic as consumers aim to maximise their welfare, thereby reducing the extent of market failure (smaller DWL).

**Anti-thesis** – Public education may not be effective:

#1: Does not internalise MEC

Given the nature of consumers to maximise only their self-interest, public education would inherently fail to incentivise consumers to internalise the negative externalities caused. As such, there remains an over-consumption of plastics in the society's point of view. Market failure remains, albeit to a smaller degree.

#2: Myopic nature of consumers

Even if consumers know about the harm microplastic is causing to their own bodies, they may not reduce their consumption of plastic to the desired level. Organ failure may take years or decades to happen and consumers, not having felt any immediate and significant negative impact on their bodies, are unlikely to reduce their consumption of plastics.

#3: Inaccurate/Imperfect information

Scientific studies on the harmful effect of plastic ingestion on the human body remains debatable. With unconvincing serious health impact, consumers may place little notice on such danger and not reduce their consumption of plastic. Market failure remains uncorrected.

### **Evaluation/ Conclusion**

Public education can, at best, remove imperfect information that consumers possess in their consumption of plastic, thus bringing consumption level down. It does not, however, make the consumer internalise the negative externalities created, thereby causing the continued existence of market failure. It is most

likely that plastic consumption will not be reduced significantly due to the overwhelming low-cost convenience it brings to consumers around the world, with or without the knowledge of the harm it may cause the human body in the very long term.	
<b>Level</b>	<b>Knowledge, Application, Understanding &amp; Analysis</b>
L3 (6 – 9)	Well-developed answer that covered both perspectives. Sound economic arguments made for convincing response to the well-understood question.
L2 (3 – 5)	For a balanced answer which lacked sufficient economic reasoning/elaboration of points raised. For example, answer did not explain how public education helps to correct market failure through provision of more information to the consumers.  OR  Well-developed one-sided answer.
L1 (1 – 2)	<ul style="list-style-type: none"> <li>- Shows some knowledge</li> <li>- Meaning of question not properly grasped</li> <li>- Basic errors of theory</li> <li>- Inadequately explained</li> <li>- A few valid points</li> <li>- Answer mostly irrelevant or inaccurate</li> </ul>
E2 (2 – 3)	Reasoned judgement based on sound economic analysis/justification.
E1 (1)	Unsubstantiated judgement.
<b>[Total: 45 marks]</b>	

**Question 2: Economic Challenges and Opportunities for Australia, Vietnam and Spain**

<b>(a)</b>	With reference to Figure 2, describe what has happened to the rate of inflation and price level in Australia.	<b>[3]</b>
	<p><b><u>Suggested Answer:</u></b></p> <p>The inflation rate is increasing [1]. The general price level is increasing at an increasing rate from 2016 Q2 to 2017 Q1 [1] and increasing at a decreasing rate from 2017 Q2 to 2017 Q3 [1].</p> <p>OR</p> <p>The inflation rate is increasing [1]. The general price level is increasing [1] at an increasing rate from 2016-2017 [1].</p>	
<b>(b)</b>	Explain 2 possible reasons why governments aim to achieve the goals of low unemployment and price stability.	<b>[4]</b>
	<p><b><u>Suggested Answer:</u></b></p> <p>Governments want to achieve low unemployment because of the impact to the government budget. If they are able to reduce the unemployment rate, the government will be required to spend less in terms of unemployment benefits and in turn are able to receive more tax revenue from the incomes of those who are employed. This will thus improve the government budget position.</p> <p>Governments want to achieve price stability because this can have an impact on economic growth of the economy. If inflation rate is high, there is unpredictability in terms of how the GPL will change and firms will have difficulty predicting their expected returns on investment and thus be reluctant to carry out investment plans. With the cut back in investment, this can result in the fall in AD and NY, ceteris paribus.</p> <p>This will cause the economy to experience negative actual growth.</p> <p>OR</p> <p>If this results in a negative net investment, then the capital stock of the economy reduces, which in turn would cause a fall in productive capacity of the economy and thus a leftward shift of the LRAS curve. This would cause the economy to experience negative potential growth.</p>	
<b>(c)</b>	<b>(i)</b> With reference to Extract 6, explain the causes of unemployment in Australia.	<b>[4]</b>
	<p><b><u>Suggested Answer:</u></b></p> <p>It is stated in Extract 6 that there was a downturn in the mining sector, leading to a fall in exports. This would have caused a fall in AD and hence</p>	

	<p>NY, causing firms to employ less labour and thus would have led to cyclical/demand-deficient unemployment. [2]</p> <p>In addition, the extract also mentions that the residents lack the requisite skills for the economy. This would have caused a skills mismatch between the jobs and workers and thus caused structural unemployment. [2]</p>													
(ii)	Discuss whether the implementation of policies with regard to training and education will be sufficient in further reducing the unemployment rate in Australia.	[8]												
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	<p>unemployment issue and help reduce the overall unemployment rate. In addition, by going for training, workers become more productive which increases the maximum amount of goods and services Australia can produce and thus causes the LRAS to shift to the right and bring about potential growth. Since such a change in policy can help to bring about the attainment of other macroeconomic goals, thus implementing the policies would be effective in reducing the unemployment rate.</p> <p><b><u>Anti-thesis: Implementing the policies would not be sufficient</u></b></p> <p>Implementing the policies would only serve to alleviate the structural unemployment issue but does not address the demand-deficient unemployment issue. The government has undertaken measures to stimulate investment which would have increased AD and thus increased the RNY. This would in turn result in an increased employment of labour and thus reduce the demand-deficient unemployment. As such the Australian government could consider further increasing the allocation of resources towards stimulating investment or consider an alternative policy such as to lower interest rates to stimulate investment and consumption in order to bring about growth and thus increase in the employment of labour, reducing the cyclical unemployment.</p> <p>Education and training policies does not guarantee effectiveness as it depends on the receptiveness of workers towards training and picking up new skills. If the government provides funding but the workers do not actively learn, the acquisition of skills may be inadequate or at a level which is insufficient for the firms looking for suitable labour.</p> <p><b><u>Conclusion/Synthesis:</u></b></p> <p>Even though jobs are being created, the unemployment rate has remained fairly unchanged. This is due to the skills mismatch between the jobs available and the unemployed. Structural unemployment is the main unemployment issue that Australia is facing and this is causing wage pressures which if not addressed, would cause Australia’s goods and services to lose export competitiveness. As such the government should implement the policies. However, there is still cyclical unemployment in the economy and thus the government would need a combination of policies to effectively tackle the unemployment issues.</p> <table border="1"> <thead> <tr> <th><u>Level (Marks)</u></th> <th><u>Knowledge, Understanding, Application and Analysis</u></th> </tr> </thead> <tbody> <tr> <td>L2 (4-6)</td> <td>Well-developed analysis of the reasons for the implementation of the policies on education and training.</td> </tr> <tr> <td>L1 (1-3)</td> <td>Under-developed analysis of the reasons for the implementation of the policies on education and training.</td> </tr> <tr> <td></td> <td><b><u>Evaluation</u></b></td> </tr> <tr> <td>E2 (2)</td> <td>Judgment made, supported by elaboration</td> </tr> <tr> <td>E1 (1)</td> <td>Judgment made but without elaboration</td> </tr> </tbody> </table>	<u>Level (Marks)</u>	<u>Knowledge, Understanding, Application and Analysis</u>	L2 (4-6)	Well-developed analysis of the reasons for the implementation of the policies on education and training.	L1 (1-3)	Under-developed analysis of the reasons for the implementation of the policies on education and training.		<b><u>Evaluation</u></b>	E2 (2)	Judgment made, supported by elaboration	E1 (1)	Judgment made but without elaboration	
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(d)	<p>“Industries such as apparel are... looking to escape the higher taxes by the U.S. on Chinese exports” and “... shifting their production out of China to countries like Vietnam due to its rising labour costs” (Extract 7).</p>	[7]												

	Explain how the abovementioned events have impacted the living standards of the residents of Vietnam.	
	<p><b><u>Suggested Answer:</u></b></p> <p>Living standards refers to the well-being of an average person in the economy. It consists of material and non-material aspects. With the changes in the global economy such as the US-China trade war, this has brought about impacts to economies around the world like Vietnam.</p> <p>With US imposing tariffs on Chinese exports, firms have moved its production out of China and into Vietnam. Firms have also moved out of China due to the increasing labour cost and into Vietnam in order to lower costs and maximise profits. These changes result in an increase in FDI into Vietnam and this will increase investment and thus AD for Vietnam. Ceteris paribus, this will increase the real national income for Vietnam. Assuming the percentage increase in population is less than the percentage increase in real GDP, this will lead to a higher real GDP per capita. A higher real GDP per capita indicates higher purchasing power and thus households can enjoy more goods and services, leading to an increase in material standard of living.</p> <p>In terms of non-material living standard, which measures the quality of life, it is mentioned in the extract that there is an increase in the amount of pollution in Vietnam due to the pollutive nature of the textile and electronics industries. With a higher level of pollution, this will lead to households having poorer health which could result in lower life expectancy and thus a fall in non-material standard of living.</p> <p>Overall, it is likely that the changes in the global economy would lead to a rise in the living standards of the residents of Vietnam as the pollution is likely to be contained within certain areas and not widespread.</p>	
(e)	Extract 8 tells us that Spain's economy grew without a government. Explain how Spain was able to do so and comment on whether there is a need for an activist government in order to ensure sustainable growth.	[7]
	<p><b><u>Suggested Answer:</u></b></p> <p>The improvement in the economic performance is due to the recovery of the global economy which would have increased household income for foreign households, leading to an increase in the demand for Spain's exports. With the increase in exports, this will increase the AD and in turn lead to higher RNY via the multiplier effect, ceteris paribus. The increase in RNY, estimated at 3.2% growth, leads to firms employing more FOP such as labour and thus cyclical unemployment falls, contributing to the fall in unemployment rate to 18.9%.</p> <p>However, while Spain is able to do so without an activist government, the growth in exports may lead to actual growth but not potential growth as seen from the extract about harms of inflation. Firms are unlikely to invest if there is political instability as they may expect low returns on investment. In addition, without any government to regulate the production of goods and</p>	

	services, firms may utilise natural resources at an unsustainable rate which in turn prevents Spain from enjoying sustainable growth. As such, an activist government is needed to implement policies to handle economic crises as well as to promote investment in the economy. Furthermore, the strong demand for exports might not continue in the future. In the event of a global downturn, there might be a fall in demand for Spain's exports and AD might fall. Government intervention might then be required to boost AD to ensure continued economic growth.													
(f)	With reference to the case material and/or your own knowledge, discuss the factors that a government should consider when deciding on the policies to achieve its economic goals.	[12]												
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as the constraints that will determine the suitability of the policies for the given economy.

**Objective:**

Before looking at the range of policies, the government needs to consider the state of the economy and the economic goal that it prioritizes in achieving due to possible trade-offs/conflicts in achieving the goals which would in turn affect the SOL of its residents. For example if a government, such as Spain, seeks to tackle the demand-pull inflation, it would consider using contractionary policies. However, the government, such as Australia, may undertake expansionary policies to grow the economy and create jobs when there is a downturn in the economy so as to improve SOL.

**Benefits:**

A government would need to consider the benefits of using each policy. This can be analysed from the effectiveness of each policy in achieving the given aim. In order to tackle cyclical unemployment, a government can consider using expansionary fiscal and monetary policies. With the use of fiscal/monetary policy, the government aims to increase components of AD which would in turn lead to an increase in RNY. With the increase in the production of goods and services, firms will employ more factors of production and thus reduce cyclical unemployment. However, the government may choose fiscal over monetary policy if the consumer and business sentiments are poor and thus increasing government expenditure will be more effective in increasing AD.

In addition, the government can consider the unintended benefits that may come with the use of the policies. For example, when the government reduces its interest rates to reduce the cost of borrowing and thus increase the C and I to increase AD, the outflow of hot money can result in the weakening of the currency and thus bring about an increase in the net exports, assuming Marshall-Lerner condition holds. This will enhance the effectiveness of the demand-management policies in achieving economic growth and in turn improve SOL.

**Costs:**

In the implementation of the policies, especially for fiscal and interventionist supply-side policies, the government will have to allocate its resources and thus incurs an opportunity cost in terms of other areas of spending that are foregone. This can be seen from the Australian example where the government may have allocated its resources towards job creation in various sectors and thus may not have sufficient resources for training and education. The government would then have to decide if they need to reallocate its budget towards training and education in light of the unemployment situation.

In addition, there may be some conflicts/trade-offs in terms of the economic goals as seen from Vietnam's example where the welcoming of FDI for growth has brought about negative externalities in production, which is a trade-off in terms of allocative efficiency. Also seen from Vietnam is that the growth it enjoys is not equally enjoyed by all its residents, where those working in export-oriented industries are seeing a higher increase in income than those not in those industries. This leads a widening income gap and thus greater inequity. Thus the SOL for the average household would only

increase by a bit. Thus the Vietnamese government may need to consider implementing policies such as a system of progressive taxes and transfer payments to reduce the inequity, as well as policies to regulate the production of goods so as to reduce the negative externalities.

### **Constraints**

In the implementation of policies, the government needs to consider the nature of the economy to determine what policies can be implemented. For Singapore, being heavily reliant on trade, the government centres its monetary policy on the exchange rate to control inflation.

The government would also have to consider the feasibility of carrying out the respective policies. For example, the US government has a huge public debt and this restricts its ability to increase government spending to stimulate the economy and thus its main policy tool has been the monetary policy.

### **Conclusion:**

While there are many factors to consider when deciding on the policies, the key consideration has to be the goal that the government seeks to achieve in order to bring about an improvement in the SOL of its residents. Beyond that, the constraints would narrow the type of policy options that the government can consider implementing. From the possible policies, the government could implement policies that complement each other so as to maximise the net benefit from the policies. This can be done through the use of expansionary demand-management policies together with supply-side policies so that price stability is achieved alongside sustained growth. The government would also need to review its policies from time to time as the benefits and costs of using each policy may change over time due to changes in the economy.

<b><u>Level (Marks)</u></b>	<b><u>Knowledge, Understanding, Application and Analysis</u></b>
<b>L3 (6-9)</b>	Well-developed analysis of costs and benefits of choosing policies framed around the decision-making process. Answer includes clearly explained examples. If students only considered either micro/macro goals, cap at L3 (7m)
<b>L2 (3-5)</b>	Some analysis of costs and benefits, but not clearly framed around the decision making process. Examples may be lacking.
<b>L1 (1-2)</b>	Smattering of valid points
	<b><u>Evaluation</u></b>
<b>E2 (2-3)</b>	Judgment made, supported by elaboration
<b>E1 (1)</b>	Judgment made but without elaboration

[Total: 45 marks]





TAMPINES MERIDIAN JUNIOR COLLEGE  
**JC2 PRELIMINARY EXAMINATION**

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**H1 ECONOMICS**

**8823/01**

Paper 1

**16 September 2019**

**3 hours**

Additional materials

Answer booklet

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**READ THESE INSTRUCTIONS FIRST**

Write your name and Civics Group on all the work you hand in.

Write in dark blue or black pen.

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

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

Answer **all** questions.

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

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

Answer **all** questions.

### Question 1: Healthcare systems around the world

#### Extract 1: Challenges of Singapore's healthcare system

Singapore's life expectancy has already grown from 75 to 83 within a generation. While this is great news for citizens, an increasingly elderly population – and the related problem of rising rates of chronic conditions – means more strain on medical resources, and this problem is compounded as more of us enjoy longer lives. As such, healthcare expenditure is expected to triple by 2030, rising to \$44 billion from \$17 billion in 2013. In light of this, many private healthcare providers are thinking of raising the price of healthcare as a form of revenue-raising strategy.

Singapore has sufficient capacity to meet demand for aged care. More public hospitals are expected to start by 2022. But it will need to continue to grow services to cater to the greying nation, meaning Singapore needs more than just manpower; it also needs to fundamentally change how its healthcare is delivered. Recruiting and training more medical professionals definitely needs to be part of the solution. But this alone will not cut it as a long-term fix because the nub of the problem is that people are living longer.

Sources: *The Straits Times*, 15 August 2018,  
and, *Business Times*, 27 September 2018

**Table 1: Selected statistics of Singapore**

Year	2011	2012	2013	2014	2015	2016
Fiscal position (million dollars SGD)	4,002.7	5,821.1	4,998.2	571.5	-4,049.7	6,124.8
Price Indices of Healthcare	89.8	93.7	97.3	100.0	99.9	101.0
Price Indices of All items	92.5	96.7	99.0	100.0	99.5	98.9

Source: *Yearbook of Statistics Singapore*, 2018

**Table 2: Number of nursing homes in Singapore**

Year	2011	2012	2013	2014	2015	2016
Total number of public nursing homes <sup>1</sup>	1	1	5	6	11	13
Total number of not-for-profit nursing homes <sup>2</sup>	31	31	28	27	26	26
Total number of private nursing homes <sup>3</sup>	32	32	33	32	34	30

<sup>1</sup>Nursing homes owned or controlled by a government unit or another public corporation.

<sup>2</sup>Nursing homes not permitted to be a source of income, or profit or other financial gains for their owners.

<sup>3</sup>Nursing homes capable of generating a profit or other financial gains for their owners.

Source: *Yearbook of Statistics Singapore*, 2018

### **Extract 2: Artificial Intelligence (AI) to the rescue in the Japanese healthcare industry**

Japan has been experiencing a persistent shortage of healthcare professionals. To alleviate the shortage, the government is teaming up with businesses and academia to set up hospitals enhanced by AI and allowing short-handed doctors to spend more time on patient care while curbing medical spending. AI helps with tasks from updating patients' charts to analysing tests and parsing images to help with diagnoses, which in turn frees up medical professionals' time to focus on more important areas. This means that AI can ease some burden for doctors and nurses and help address the labour shortfall.

The Japanese government is expected to invest more than 100 million yen in the effort over half a decade, with a target of establishing 10 model hospitals by 2022. Such government investment in AI aims to address structural challenges to healthcare, including the chronic lack of doctors and nurses in some areas and rising medical expenses. The initiative will also enhance the competitiveness of AI-enabled medical devices alongside the development of AI technology. Currently, Japan's domestic market for AI-enabled medical devices is estimated at about 2.8 trillion yen. But imports surpass exports by 800 billion yen as doctors rely on foreign-made treatment equipment. Overall, Japan's market related to AI-enhanced treatment is set to reach 15 billion yen by 2025, about 4 times as compared to 2016.

Source: *Nikkei Asian Review*, 9 Aug 2018

### **Extract 3: The pitfalls of AI**

AI has been touted as a possible solution to counter the shortage of medical professionals in the healthcare industry. However, AI is still in its infancy in terms of its use in healthcare. There have also been fears that AI may pose a threat to jobs. However, some proponents argued that this would not be the case in healthcare - at least not in our lifetime. In both diagnosis and treatment, understanding context is vital, so human judgement will still have an integral role to play. This means that even as some jobs are destroyed by the rise of AI, new ones will be created. AI in healthcare can also boost economic growth rates and increase productivity. For instance patients can be diagnosed more quickly and accurately by apps designed to identify illnesses. Nonetheless, the biggest obstacle to implementing AI in healthcare is the lack of trust – more than one-third surveyed say patients will not trust AI to play an active role in their healthcare, and 30 percent assumed that clinicians will not trust it either.

Sources: *Business Times*, 27 September 2018,  
and [www.channelnewsasia.com](http://www.channelnewsasia.com), 8 May 2018

### **Extract 4: The 3 'M' healthcare framework in Singapore – is there a need to review?**

Singapore's healthcare system has been well-regarded as an example of how government expenditure on healthcare per capita has been kept low even as continual improvements are made. This is largely attributed to the 3 'M' framework – MediSave, MediShield Life and MediFund.

The MediSave scheme is a compulsory national medical savings account system that allows Singaporeans to set aside part of their monthly contribution to the Central

Provident Fund (CPF) for personal or immediate family's medical and certain outpatient expenses. The compulsory contributions to one's MediSave Account are dependent on a few factors, such as age and income. The MediSave scheme is a unique aspect of the Singapore's healthcare system, because it emphasises on a shared responsibility between the government and people. It is anchored by a co-payment system where individuals can use their MediSave account to offset the costs of various treatments, with a portion being partially subsidised by the government and the rest in cash by the patient.

Next, the MediShield Life, a medical insurance scheme, also administered by CPF Board, offers Singaporeans better protection against high medical bills. MediShield Life helps to offset a portion of the large hospital bills and selected costly outpatient treatments, such as dialysis. If the expenses were too large, the patient would have to draw from his or her MediSave account or cash to pay the remaining balance.

Lastly, the MediFund is a safety net for patients who face financial difficulties with their remaining bills after receiving government subsidies and drawing on other means of payment including MediShield Life, MediSave and cash. An independent MediFund Committee will decide on the appropriate quantum of assistance (in the form of, for example, subsidies) to provide.

However, in recent weeks, the affordability of healthcare services and coverage of medical insurance had come under spotlight, following a case where MediShield Life covered only S\$4.50 of a patient's bill that was over S\$4,000. There were also concerns that MediShield Life did not cover maternity and fertility treatments as well as hospice care.

So, what can the government do to make the policies more affordable? Firstly, it can consider revising its MediSave withdrawal limits, and the qualifying conditions must be done in a calibrated manner. This is to ensure it meets the needs of those who need it most. Next, it can also consider offering tax deductions or reliefs for premiums on medical-related insurance policies, which would alleviate the burden of unforeseen or ongoing medical costs.

Singapore's healthcare system is pragmatic and sustainable. The reality is that with an ageing population, the healthcare burden on the government and Singaporeans will inevitably rise. Empowering self-reliance with targeted support will go some way in helping people better bear the future costs of healthcare. Ultimately, optimal healthcare management must be a shared responsibility between the government and people, and having the right policies that nimbly address the different motivations and needs of various income groups is vital.

Sources: *Today*, 11 February 2019,  
and Ministry of Health, 2019

## Questions

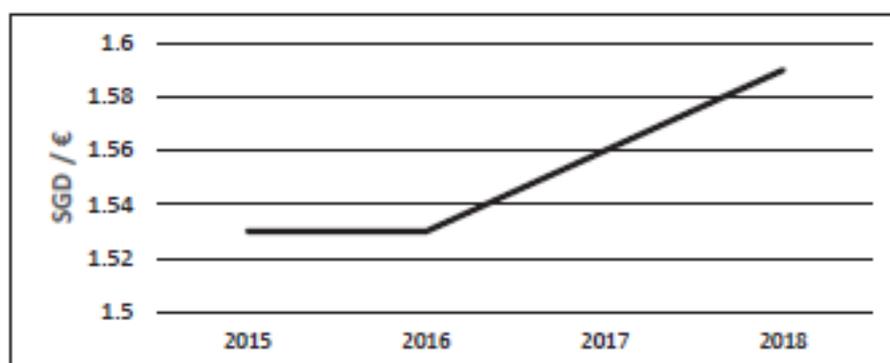
- (a) Identify **two** differences between the change in the price of healthcare and that of all items in Singapore during the period 2011–2016. [2]
- (b) Summarise the data shown in Table 2 on the different types of nursing homes in Singapore during the period 2012–2016. [2]
- (c) Explain why “healthcare expenditure is expected to triple by 2030” (Extract 1) and comment on the effects. [8]
- (d) With the aid of a demand and supply diagram, explain a possible reason why Japan is experiencing a “persistent shortage” (Extract 2) in the labour market for healthcare. [4]
- (e) With reference to Extract 2, explain the impact of an increase in competitiveness of Japan-made AI-enabled medical devices on **two** components of Japan’s Aggregate Demand. [4]
- (f) With reference to data, assess the factors that a government would have considered in deciding whether to invest in AI in the healthcare sector. [7]
- (g) (i) Explain how information failure has caused an inefficient allocation of resources in the healthcare market. [6]
- (ii) Extract 4 mentions that the Singapore’s healthcare system emphasises on a shared responsibility between the government and people.

Using evidence from the case study and/or your own knowledge, discuss the extent to which shared responsibility is the best approach to address inefficiency and inequity in Singapore’s healthcare market. [12]

[Total: 45]

**Question 2: What happened in the Eurozone and Singapore?**

**Figure 1: Average exchange rate of Singapore Dollar (SGD) to Euro (€), 2015 to 2018**



Source: [www.statista.com](http://www.statista.com), accessed on 30 July 2019

**Table 3: Selected statistics for the Eurozone<sup>1</sup>, 2015 to 2018**

	2015	2016	2017	2018
GDP growth (annual per cent)	2.1	1.9	2.5	1.9
Inflation rate (annual per cent)	0.19	0.24	1.54	1.76
Unemployment rate ( per cent of total labour force)	10.8	10.0	9.0	8.2
Budget balance ( per cent of GDP)	-2.0	-1.6	-1.0	-0.5
Gini Coefficient	0.308	0.307	0.305	-

<sup>1</sup>The Eurozone consists of 19 members who are EU members and use the euro. They are Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia and Spain.

Source: Various

**Table 4: Selected statistics for Singapore, 2015 to 2018**

	2015	2016	2017	2018
GDP growth (annual per cent)	2.9	3.0	3.7	3.1
Inflation rate (annual per cent)	-0.52	-0.53	0.58	0.44
Unemployment rate ( per cent of total labour force)	3.8	4.1	3.9	3.8
Budget balance ( per cent of GDP)	-0.6	-0.5	0.5	-1.1
Gini Coefficient	0.435	0.458	0.459	0.458

Source: Various



### **Extract 5: Eurozone grows at fastest pace for 10 years**

The Eurozone grew by 2.5 per cent in 2017, the fastest growth rate since a 3 per cent rise in 2007. Investec economist Ryan Djajasaputra said much of the growth had been driven by the Eurozone's core four economies: Germany, France, Italy and Spain. He attributed the strength of the Eurozone to the European Central Bank's (ECB) stimulus policies. The quantitative easing (QE) programme cut interest rates in the Eurozone to zero by expanding its money printing programme to revive the economy and fend off deflation. Also, he said confidence had been hitting record levels since the crisis years in the Eurozone and unemployment was down to pre-crisis levels.

Sarah Hewin, chief economist at Standard Chartered, said: "Activity is being supported by strong global growth, which is helping European exporters. In terms of domestic factors, rising wages, low inflation and record-level employment are driving consumer spending; meanwhile, investment is rising, helped by strong profitability and buoyant confidence." However, while she expected Eurozone economic growth to stay strong, "higher energy prices and a stronger euro may be headwinds to growth this year".

Source: [www.bbc.com](http://www.bbc.com), 14 February 2018

### **Extract 6: Eurozone unemployment rate falls but youth unemployment rate remains high in some member countries**

The unemployment rate in the Eurozone has fallen to its lowest since February 2009. Last month, Greece has the highest rate of unemployment in the Eurozone at 21.7 per cent, and also the highest rate of youth unemployment at 45.5 per cent. The second highest unemployment rate was 17.1 per cent in Spain, which was down from 19.9 per cent a year earlier. Spain also had the second highest level of youth unemployment among 15-24 year olds at 39.2 per cent. Across the region, youth unemployment rates are higher for those who have less education. "The longer that somebody is unemployed, the more likely they are to become discouraged, miss out on opportunities to develop skills and drop out of the labour force," said Jessica Hinds, European economist at Capital Economics.

Sources: [www.bbc.com](http://www.bbc.com), 31 July 2017,  
and Business Insider Singapore, 9 November 2017

### **Extract 7: European labour market reforms: A two-handed approach**

In 1985, European unemployment was double-digit, youth unemployment was high in many countries, and long-term unemployment was increasing. At that time, a group of distinguished economists advocated that policies to lower unemployment must be two-handed – they "must act on supply (on structure) at least as much as on demand; otherwise, gains will be temporary at best and may in fact worsen structural problems".

Thirty years later, aggregate unemployment remains high (though lower than two years ago). Youth unemployment and long-term unemployment are alarmingly high in some countries. Is it time to revive the two-handed approach? And will it work in a world of economic and monetary union and greater global capital and labour integration?

Source: Centre for Economic Policy Research, 5 December 2016

### **Extract 8: Technological disruption may push up unemployment rate**

Singapore's labour market faces challenging times ahead, and not just because of the slowing economy. The lacklustre sentiment has stunted job creation and prompted a wave of layoffs in the hardest-hit sectors. Also, the Monetary Authority of Singapore (MAS) said skills mismatches in the labour market are rising due to the unrelenting technological changes that leave old skills outmoded. The Singapore economy is increasingly moving towards higher value-added, niche sectors – such as medical technology and data analytics – in a bid to maintain its competitive edge. These provide good jobs, but require specialised skills that most retrenched PMETs (professional, managers, executives and technicians) do not have and may take a while to acquire.

More than just a loss of financial security, retrenchment can have a knock-on effect on mental health and well-being too. Middle-aged to older adults tend to be more susceptible to job-related anxiety as they worry that it is too late to start over or re-train themselves. To adapt, workers can keep a lookout for opportunities to deepen and extend their own skills, said SIM University economist Walter Theseira. “It is going to be very hard for the Government or employers to force workers down a particular skills pathway, because everyone has different abilities.” He also suggested that policymakers aim to ease this "adjustment burden" to the firms by subsidising wage costs.

Source: *The Straits Times*, 28 October 2016

### **Extract 9: Singapore well-placed to weather uncertainties but government ready to step up support**

With a strong fiscal position and restructuring of the economy, Singapore is well-placed in the weakened global economy, said Trade and Industry Minister Chan Chun Sing. Nevertheless, the Government is closely monitoring all economic developments and stands ready to step up support for companies here, he said. Noting that the global economy has weakened, the minister pointed to the US-China trade dispute and Brexit as key uncertainties. Singapore's open and trade-reliant economy logged its slowest growth in nearly a decade during the first quarter.

Given the external challenges, MAS said the Singapore economy will turn towards domestic drivers for growth such as higher government spending on research and technology. The country must constantly refresh its offerings to businesses and investors so as to seize new opportunities such as additive manufacturing which is being created in the field of advanced manufacturing. In addition, the Government tries to provide a skilled workforce that continues to take up training. As digital trade is also a key driver of Singapore's future economic growth, Mr Chan said Singapore will keep advocating for an integrated and global digital economy by co-developing international trade rules in this area.

Source: [www.channelnewsasia.com](http://www.channelnewsasia.com), 8 July 2019

**Questions**

- (a) (i) With reference to Figure 1, state what happened to the average exchange rate of the Singapore Dollar between 2015 and 2018. [1]
- (ii) With the aid of a demand and supply diagram, explain one possible reason for the change observed in (a)(i). [3]
- (b) To what extent can it be concluded from Table 3 that the standard of living in the Eurozone in 2018 is better than in 2015? [7]
- (c) With reference to Extract 5 and using AD/AS analysis, explain and comment on how “higher energy prices and a stronger euro may be headwinds to growth this year”. [8]
- (d) With reference to Extract 8, identify and explain the main types of unemployment in Singapore. [6]
- (e) Explain the impact of higher unemployment on employees, the government and the economy. [8]
- (f) Discuss the extent to which a government from the Eurozone should adopt the policies implemented by the Singapore government to achieve both economic growth and a low rate of unemployment. [12]

[Total: 45]

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**TMJC Economics Unit 2019**  
**JC2 H1 Economics 8823**  
**JC2 Prelim Suggested Answer Package**

### Suggested answers for CSQ1

(a)	<p><b>Identify two differences in the change in price of healthcare with that of all items in Singapore from 2011 to 2016 (2m)</b></p> <ul style="list-style-type: none"> <li>- Overall the price of healthcare (12.5%) experience a higher increase of 1.8 times than all items (6.9%) in Singapore</li> <li>- In 2016, the price of healthcare increase, but the price of all items in Singapore fell.</li> </ul>	[2]
(b)	<p><b>Summarise the data shown in Table 2 on the number of different types of nursing homes in Singapore from 2012 to 2016.</b></p> <p><u>Overall trend:</u> the number of public nursing homes increased, whilst the number of private and non-for-profit nursing homes has fallen.</p> <p><u>Refinement:</u> The number of the private nursing home remains the highest each year. OR The number of public nursing home remain the lowest each year.</p>	[2]
(c)	<p><b>Explain why the “healthcare expenditure is expected to triple by 2030” (extract 1) and comment on the effects.</b></p> <p><b><u>Explain (5m)</u></b></p> <ul style="list-style-type: none"> <li>• Increase in Demand → higher life expectancy/Ageing population + chronic diseases → increase in DD by a great extent over a sustained period of time (due to the chronic nature and higher lifespan to demand for healthcare) → Increase in TE ( PxQ)</li> <li>• Fall in Supply → shortages of labour in the healthcare industry upward pressure in wages → increase unit COP of supplying healthcare → healthcare is a necessity and broadly defined hence PED &lt; 1. Increase in price of healthcare leads to a less than proportionate fall in qty Dd → gain in TE resulting from a rise in price outweigh the fall in Qty dd due to a fall in TE → Overall TE increases.</li> <li>• Hence, both the increase in DD and fall in SS in healthcare reinforce the increase in TE leading to a very large extent into the future.</li> </ul> <p><b>Comment: Up to 3 further marks for valid and relevant comment on the effects:</b></p> <ol style="list-style-type: none"> <li>1. Challenge the claim “expected to triple” → comment on the extent of increase.</li> </ol> <p>(Point) In the future, changes in production techniques in the healthcare industry (e.g. The option of AI) may (Economic linkages) increase the productivity hence lower the unit COP. Hence this mitigates the increase in TE. Given the (Evidence) trend that other countries such as Japan are adopting AI, Singapore may follow the model of Japan given the similar demography and hence this is likely to happen to large extent. (Link back to question) Thus, the increase in TE may be to a smaller extent than ‘triple’ effect.</p> <ol style="list-style-type: none"> <li>2. The increase in expenditure may happen in a shorter time frame then suggested by the extract (i.e. earlier than 2030). This may happen if the demand for healthcare</li> </ol>	[8]

	<p>increases faster than expected. In challenging the ceteris paribus assumption, apart from demography changes of ageing population, compounded by chronic diseases occurrence there could be evolving health issues in the younger working adult segments of the population due to mental health problems or work-stress related health issues in the Singapore population. Hence demand will increase by a larger extent, within a shorter time period.</p> <p>3. The effect of healthcare expenditure increase in the future could mean that from the perspective of consumers and government, higher opportunity costs is incurred.</p> <p>Higher healthcare expenditure borne by the consumer imply that there is a trade off in expenditure on other consumer goods, assuming the incomes of households remain unchanged. On the other hand, higher healthcare expenditure may imply that the government will need to increase gov expenditure to provide higher subsidies to lower income households and hence incur an opportunity costs in expenditure on other developmental areas such as education This also assumes that the government revenue remains unchanged.</p> <p>The extent of opportunity costs incurred maybe higher for households because relative to the government, their incomes are likely to be remain unchanged for a longer period of time. Whereas the government can easily garner more resources through policy changes leading to higher tax revenues.</p>	
<p>(d)</p>	<p><b>With the aid of a demand and supply diagram, explain a possible reason why Japan is experiencing a “persistent shortage” (Extract 2) in the labour market for healthcare.</b></p> <ul style="list-style-type: none"> <li>An accurate labelling and use of a labour dd-ss diagram.</li> </ul>  <ul style="list-style-type: none"> <li>Explain a possible demand increase or supply fall of labour.</li> <li>Define shortage: Qty DD &gt; Qty SS @ W1 wage level, shown on the diagram.</li> <li>Address “persistent” <ul style="list-style-type: none"> <li>Short term rigidity, wages unable to adjust upward due to contract agreements.</li> <li>Time lags for wages to price to clear the labour market.</li> <li>Before a new equilibrium is reached, DD increases again/ SS falls again leading to a shortage again.</li> </ul> </li> </ul>	<p>[4]</p>

(e)	<p><b>With reference to Extract 2, explain the impact of an increase in competitiveness of Japan-made AI-enabled medical devices on two components of Japan's aggregate demand.</b></p> <ul style="list-style-type: none"> <li>- Define competitiveness - price competitiveness, non-price competitiveness</li> <li>- Define AD: <math>C + I + G + X - M</math></li> <li>- With reference to Extract 2 → there is government investment in the development of AI → the investment can be in the form of a subsidy to the research &amp; development → An increase quality and applicability of AI in the healthcare sector → increase in non-price competitiveness → Increase in DD for Japan medical devices by foreigners with reason/linkages → X revenue increases</li> <li>- A government investment can also mean a direct subsidy to the production of AI enabled medical devices → lower unit COP of AI enabled devices → An increase in price-competitiveness → healthcare sector switch from imported medical devices to purchase cheaper domestically produced medical devices → Cd</li> </ul>	[4]
(f)	<p><b>With reference to data, assess the factors that a government would have considered in deciding whether to invest in AI in the healthcare sector.</b></p> <ol style="list-style-type: none"> <li>1. Constraints: For a government to invest in AI to apply to the healthcare sector, it will involve expenditure on R&amp;D and development of capital goods e.g. Robotics related to healthcare sector However, the constraints that the government faces will influence this decision. For e.g. a government with a budget deficit may not have the funding to do so, but the government with a budget surplus ( Singapore in Table 1) will have the capabilities.</li> <li>2. Benefits: The government will need to have information about the benefits and be able to monetize it. The benefits of developing AI in the healthcare sector involve "Automate routine" (Extract 3). This will increase productivity of healthcare services in turn deepening the quality and quantity of healthcare services produced thus raising the material and non-material SOL of citizens. Other forms of benefit can include early detection of diseases, enabling patients to seek medical earlier that can potentially be cheaper. Thus, the overall costs of medical fees to the household will be reduced.</li> <li>3. Costs (explicit and opportunity costs): It is very costly to research in R&amp;D of AI in healthcare, thus the same value of expenditure in AI cannot be deployed in other sectors e.g. education, thus incurring an opportunity cost. Such trade-offs can be high for emerging economies where the development of healthcare, education and other social sectors still require more expenditure.</li> <li>4. Unintended consequence: An unintended consequence is structural unN, the application of AI can cause technological unN in the short term due to the lack of skills to manage robotics.</li> </ol> <ul style="list-style-type: none"> <li>• Criteria: Time. The long-term prospects of healthcare industry see a fast-growing demand and a situation of shortages of manpower. Assuming a government is not constraint by the budget, the benefits factor is the most important to consider as a</li> </ul>	[7]

	<p>permanent long-term solution to alleviate the manpower shortages and also improve the quality of healthcare. No doubt, AI will be very costly, without it, solving recurring issues (higher wages of labor due to shortages) in the healthcare market over time, may incur as much or more costs.</p> <ul style="list-style-type: none"> <li>Finally, unintended consequence though negative, can also be offset by unintended beneficial consequences. For e.g. the adoption of AI can lead to technological transfer of knowledge to workers, thus raising their skills on the job. For government such as Japan that can also export the capital goods, AD and ADL can increase to encourage further employment in the country.</li> </ul> <table border="1"> <tr> <td>L2</td> <td>Well-developed, balanced explanation the factors that a government would have considered in deciding whether to invest in AI in the healthcare sector</td> <td>4-5</td> </tr> <tr> <td>L1</td> <td>           Descriptive or analysis that lacked depth with regards to the factors that a government would have considered in deciding whether to invest in AI in the healthcare sector            OR             Up to 1 well-explained factor that a government would have considered in deciding whether to invest in AI in the healthcare sector (capped at 3m)         </td> <td>1-3</td> </tr> <tr> <td>EV</td> <td>Well-reasoned evaluation on the factors a government would have considered in deciding whether to invest in AI in the healthcare sector (e.g. ranking of the importance/ significance of the factors from government's perspective)</td> <td>Up to 2 marks</td> </tr> </table>	L2	Well-developed, balanced explanation the factors that a government would have considered in deciding whether to invest in AI in the healthcare sector	4-5	L1	Descriptive or analysis that lacked depth with regards to the factors that a government would have considered in deciding whether to invest in AI in the healthcare sector OR  Up to 1 well-explained factor that a government would have considered in deciding whether to invest in AI in the healthcare sector (capped at 3m)	1-3	EV	Well-reasoned evaluation on the factors a government would have considered in deciding whether to invest in AI in the healthcare sector (e.g. ranking of the importance/ significance of the factors from government's perspective)	Up to 2 marks	
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EV	Well-reasoned evaluation on the factors a government would have considered in deciding whether to invest in AI in the healthcare sector (e.g. ranking of the importance/ significance of the factors from government's perspective)	Up to 2 marks									
(g)	<p><b>(i) Explain how information failure has caused an inefficient allocation of resources in the healthcare market.</b></p> <p>Define information failure in the healthcare market:</p> <ul style="list-style-type: none"> <li>under-estimation of the private benefits in consumption of healthcare</li> <li>For example, consumption of healthcare services such as regular health screening or primary healthcare improves the health status of a person over the long term and the good health enjoyed later on age enables the individual to be more productive in their work and raises their salaries over their working lives.</li> <li>However, the increases in income as well as healthcare costs savings are in the future, uncertain and difficult to estimate accurately. This lack of information leads people to underestimate the private benefits healthcare and leads to an under-demand and under-consumption of education as seen in Figure 1 where <math>MPB_1</math> (info failure) <math>&lt;</math> <math>MPB_2</math> (perfect information), and <u>it is assumed that there is no externality in consumption of healthcare since only information failure is relevant in this question.</u></li> </ul>	<b>[6]</b>									

	<ul style="list-style-type: none"> <li>• The market equilibrium is at E1 where <math>MPB_1 = MPC</math> as producers and consumers maximize their self-interest and suffer from information failure. The <u>market output</u> will be at <math>0Q_1</math> and market price at <math>OP_1</math>.</li> <li>• Society's welfare is maximized at <math>MSB = MSC</math> where there is perfect information. The socially optimal level of output is at <math>0Q_2</math> and the socially optimal level of price is at <math>OP_2</math> and this is where society's welfare is maximized. The society's welfare is maximized as producing one more or one less unit will reduce society's welfare.</li> <li>• There is, thus an underproduction and underconsumption of <math>Q_1Q_2</math> units of the good which means that there is an underallocation of resources into the market for education.</li> <li>• Total social cost from consuming <math>Q_1Q_2</math> units of the good (<math>Q_1E_1E_2Q_2</math>) is less than the total social benefit from consuming <math>Q_1Q_2</math> units (<math>Q_1aE_2Q_2</math>), leading a welfare loss of area <math>E_1E_2Q_2</math>. This is also known as a deadweight loss</li> <li>• Hence there is allocative inefficiency in the market where the right amount of the good is not produced and there is market failure.</li> </ul>	
	<p><b>(ii) Extract 4 mentions that the Singapore's healthcare system emphasises on a shared responsibility between the government and people.</b></p> <p><b>Using evidence from the case study and/or your own knowledge, discuss the extent to which shared responsibility is the best approach to address inefficiency and inequity in Singapore's healthcare market.</b></p> <p><u>Introduction:</u>  <u>State aim of government:</u> All governments, including the Singapore government, aims to <b>maximise societal welfare</b>, and in the aspect of healthcare market, it aims to achieve <b>efficiency in resource allocation</b> and equity in distribution.</p> <p><u>Link to the Extract (4) and address the question:</u> As mentioned in Extract 4, one unique feature of the Singapore's healthcare system is its emphasis on a shared responsibility between the government and people. Such a shared responsibility is anchored by a co-payment system where individuals can use their Medisave account to offset the costs of various treatments, and is partially subsidised by the government. In addition, the Medisave account is a compulsory national savings</p>	[12]

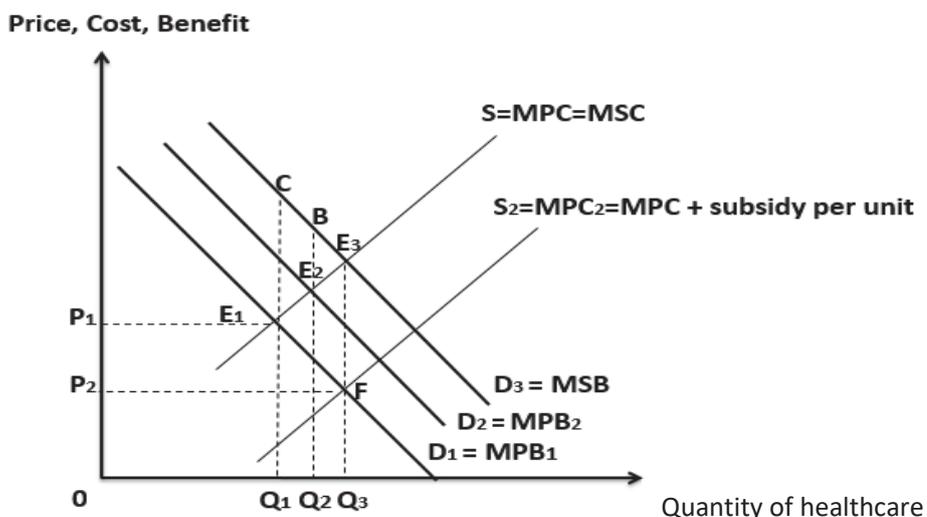
scheme, indicating that it is also a form of legislation. However, there are possible drawbacks in this policy, which are discussed below.

**Body/ Development:**

*Thesis: Shared responsibility is the best approach for the healthcare market in SG*  
*Explain Step (1) What the policy is about + Step (2) How well the policy works + Step (3) How well the policy works (Benefits)*

Firstly, the shared responsibility feature is a combination of legislation and subsidies.

The shared responsibility is akin to “a co-payment system” (Extract 4), meaning that patients (e.g. consumers) can “use their Medisave account to offset the costs of various treatments, with a portion being covered by government subsidy and in cash by the patient”. Since the government also partially subsidises for the patients’ healthcare expenses, this would mean that when the government grants a subsidy of E3F equivalent to divergence between D1 and D3 at output, 0Q3. This reduces the unit cost of supplying healthcare. With the decrease in unit cost of production, there is now more potential profit for each unit of output the industry produces. The producers are incentivized to increase the quantity supplied at every price thus shifting the supply curve from S to S<sub>2</sub> as shown below. The market output thus increases from 0Q<sub>1</sub> to the socially optimum output of education, 0Q<sub>3</sub>, correcting the under-allocation of resources. The market price falls from OP<sub>1</sub> to OP<sub>2</sub>. The socially ideal price of OP<sub>3</sub> is not attained.



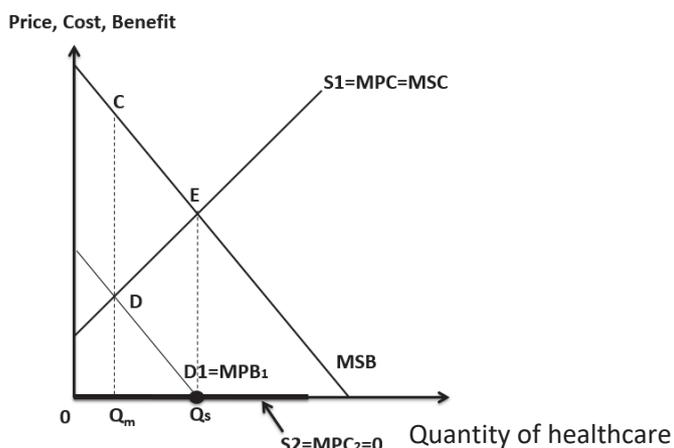
**Pros of shared responsibility:**

- ⊗ More importantly, since this is a shared responsibility between government and its people, the Singapore government minimises the risk of over-subsidy in this case, which in turn may reduce the extent of government failure due to imperfect information. It also reduces the excessive worsening of government budget, and in turn, the government is then able to allocate its budget to other equally or more important sectors (e.g. education), depending on its priorities. Hence, the opportunity cost incurred here as opposed to a full subsidy is a lower.

<p>⊗ In addition, such as shared responsibility approach raises the incentive for consumers (patients) to take care of their health, as they still have to pay a portion via their Medisave account. This will reduce the risk of the unintended consequence of overconsumption of healthcare services as opposed to a full-fledged subsidy.</p> <p>⊗ Being a market-based solution, subsidy can be easily implemented to bring about socially ideal level of resource allocation without excessive government monitoring as compared to other measures. It has greater flexibility and fairness as the amount of subsidy can be varied to reflect the extent of information failure and external benefit that arise in the healthcare market. In addition, it gives the patient an incentive to undertake more healthcare (e.g. raise in demand) since it reduces additional private costs of healthcare at any given level of output.</p> <p>⊗ <u>Answer the question / Link back to the question:</u> Overall, this suggests that shared responsibility may be the <b>best</b> approach for the healthcare market in Singapore.</p> <p><i>Antithesis (1): Shared responsibility is <u>not</u> the best approach for the healthcare market in SG</i></p> <p><i>Explain Step (3) How well the policy works (Costs)</i></p> <p>⊗ However, Extract (4) also mentions that “in recent weeks, the affordability of healthcare services...had come under spotlight”. This suggests a possible under-subsidy by the government, thereby unable to achieve a socially optimal level of output in the healthcare industry. As such, government failure ensues. This is further supported by Extract 1, which states that “healthcare expenditure is expected to triple by 2010, reducing the affordability of healthcare and hence a higher subsidy may be required to eliminate the welfare loss. <i>(students can choose to illustrate the possible government failure on a diagram)</i></p> <p>⊗ <u>Answer the question / Link back to the question:</u> Overall, this suggests that shared responsibility may <u>not</u> be the best approach for the healthcare market in Singapore.</p> <p><i>Antithesis (2): Shared responsibility is <u>not</u> the best approach for the healthcare market in SG</i></p> <p><i>Explain other policies pertaining to context and/or with own contextual knowledge</i></p> <p><u>E.g. Government provision (direct provision):</u></p> <p>Since shared responsibility via co-payment system has its limitations, it may not be the best approach for the healthcare market in Singapore. Thus, the Singapore government can consider using direct provision instead.</p> <p><b>Government can provide healthcare services directly to consumers (in this case this is the firms) free of charge e.g. fully subsidizing the cost of healthcare.</b></p> <p>For example, the Singapore government could perceive the extent of market failure in the healthcare market to be extremely large and chooses to provide free healthcare services to its citizens. Referring to the diagram below, assume that the extent of positive externality and information failure generated is extremely large at EQs. Without government intervention, the market equilibrium is at DD = SS (MPB1 = MPC1) where there exists a severe under-consumption of QmQs. Free government provision of</p>
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healthcare results in the marginal private cost incurred to be at 0 ( $MPC_2$ ) and the supply curve to be perfectly price elastic ( $S_2$ ). With free provision of healthcare ( $P=0$ ), the new market equilibrium is now at  $D_1 = S_2$  ( $MPB_1 = MPC_2$ ) and consumption is at the socially optimum level of  $Q_s$ .

There is effectively a 100% subsidy by the government. Deadweight loss of CED is eliminated and the right amount of the healthcare services is being produced thereby achieving allocative efficiency. In this instance, providing healthcare free leads to an efficient and equitable allocation of an economy's resources.



*Pros of direct provision:*

- ⊗ Direct provision by the government ensures efficiency in the market by solving the shortfall directly. Moreover, state provision allows the government greater control over the quality and quantity of the healthcare services to be provided. This makes it easier to intervene in the healthcare market to achieve their goals.
- ⊗ High initial investment is needed to set up hospitals and healthcare facilities and to ensure that it is provided at the right amount. If the provision of healthcare is left entirely to the private sector, there would be insufficient investment and the market failure will still persist. Direct provision by government would ensure an optimal provision of healthcare is consumed and coordinated in the public interest.
- ⊗ State provision of healthcare ensures that the poor are not left out and there is equality of opportunity. There are some things that should be provided not according to the ability to pay but according to need. It should be provided as a right. Given the inequality in income, people have unequal access to healthcare services and **lower income groups might not** be able to afford. If healthcare services are left to market forces, **they will only be** accessible to the higher income groups. The **income inequality would persist and worsen** over time, eroding social cohesion.

*Cons of direct provision:*

- ⊗ However, direct provision requires spending by the government which may worsen the government's budget position. In addition, financing such expenditure by tax revenue may result in **unintended consequences** such as the disincentive effects on investment and work, hampering economic growth in the long term. Raising direct

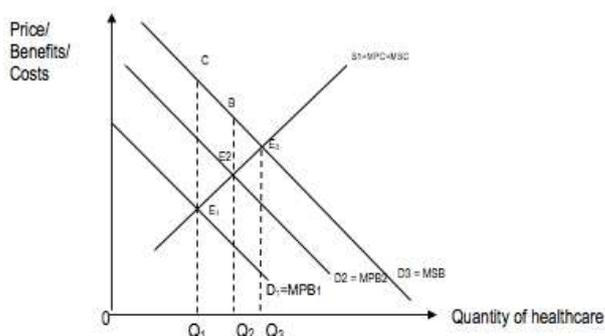
taxes decreases household's incentives to work and firm's incentives to invest. Higher personal income tax decreases disposable income (income after minus taxation and addition of transfer payments). This increases the opportunity cost of working (or lowers the opportunity cost of enjoying leisure). Hence workers may have less incentive to work longer hours, work more efficiently. Or it might entice people that were previously employed to give up work. At every price individuals are less willing to work and each market produces less output. If enough individual supply curves shifted, the total amount the economy can produce decreases.

- ⊗ There is the risk of government failure. Governments face the **constraint** of being unable to gather enough information to determine the right amount to provide in the market. Public ownership may also create more problems if it is plagued by bureaucracies.

E.g. Legislation:

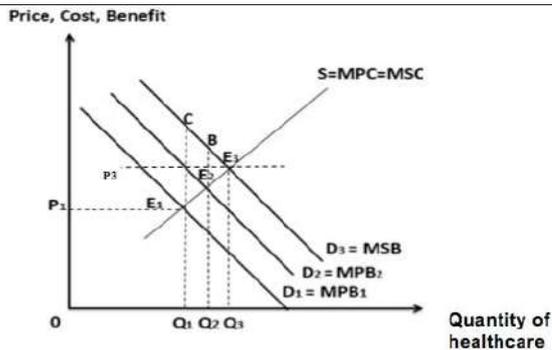
In addition, the government can also consider legislation. Legislations are rules and regulations for compliances. For instance, the government has made certain vaccinations such as those administered to a child before 1 year of age (e.g. for Diphtheria & measles) compulsory.

Punitive measures will be established. There will be monitoring and checking to ensure that consumers adhere to the compulsory vaccinations in the market for healthcare. Otherwise, such lawbreakers will be punished e.g. they may have to pay a fine. Such measures when put in place ensure compliance; and law breakers will be taken to task. The fear of being punished upon violation of the laws prevent the stealing of intellectual property and increases the incentives to consume more healthcare towards socially optimal, thereby correcting the market failure.



The benefits of these legislations raise the industry's demand of healthcare as individuals compliant with the laws to avoid punitive measures. This is shown by a rightward shift of demand curve for healthcare from D1 to D2 (or MPB2) as shown in the diagram above. There is now more incentive to pursue healthcare. At every price level, the quantity of healthcare demanded increases. This results in the industry undertaking education at MPC = MPB2 an increase of Q1 to Q2. The industry is now nearer to the socially optimum level of healthcare, OQ3, and there is underproduction of fewer units (Q2Q3) of healthcare services thus reducing the deadweight loss from E1E3C to E2E3B. Market failure as a result has been reduced. If government intervention is very successful and

<p>the policy is very effective, the industry will be able to internalize the full external benefits and MPB increase to MSB leading to the market failure fully corrected.</p> <p><i>Pros of legislation:</i></p> <p>√ Legislation is considered to be a powerful tool as it is mandatory. While market-based solutions may be a more sophisticated means of reaching a socially efficient output, command-and-control methods are usually more straightforward to devise, easier to understand and easier to implement. It is used when it is not possible or effective to rely on changing market signals. E.g. when the extent of the market failure is extensive or plagued with high degree of uncertainty, it is only realistic to use regulations.</p> <p><i>Cons of legislation:</i></p> <p>⊖ However, laws require <u>costly monitoring</u> and <u>enforcement</u>. For this measure to be effective, the government needs regular checks to ensure adherence. This requires large amount of manpower to monitor and enforce, which involves high opportunity cost. The penalties for violations also need to be severe enough for the measure to be a deterrent.</p> <p>⊖ In addition, legislations are also considered to be a blunt instrument compared to market-based solutions as it is not sensitive and cannot be customised to the needs and circumstances of the individual patients (e.g. consumers) and can only be changed through legislation which may be burdened by bureaucracies.</p> <p><u>E.g. Education &amp; campaigns:</u></p> <p>Moreover, as mentioned in gi, information failure / imperfect information as a source of market failure also exists in the market for healthcare. Thus, another policy to solve this source of market failure would be education &amp; campaigns.</p> <p>The Singapore government can conduct many healthcare awareness campaigns (e.g. diabetes campaigns etc). By doing so, the government can educate the public through mass media and carry out campaigns to teach the citizens the importance of consuming healthcare. Private benefits will be appropriately valued and demand for the good will increase, increasing production and consumption of merit goods towards socially optimal level. Referring to the diagram above, if such provision of healthcare successful in addressing the information failure and thus increasing demand from D1 to D2, raising production and consumption from Q1 to Q2, the inefficiency would be reduced. The deadweight loss has decreased from E1E3C to E2E3B.</p>
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*Pros of education & campaigns:*

✓ Public education may also appeal to people's social responsibility to care for others. Once citizens are convinced, demand for the good will rise further increasing the consumption of the good closer to the socially optimal amount. Public education is particularly useful in addressing one of the 2 problems of merit goods such as healthcare - information failure.

*Cons of education & campaigns:*

⊗ Public education is a long-term and costly process to undertake with uncertain outcomes. The success of this measure depends on the receptivity of the target audience which is highly unpredictable. In addition, financing public education requires government spending which may be financed by high taxes, creating disincentive effects on work and investment. There will be adverse effects on economic growth.

Synthesis & Evaluative Conclusion:

Overall, whether shared responsibility is the best approach to the healthcare market in Singapore depends on:

- ⊗ State / size of government budget → if budget constraint is a concern, then shared responsibility could be considered as the best approach as it is only a form of partial subsidy as opposed to a full-fledged subsidy that may worsen the government budget by a larger extent. For the Singapore government, the budget may not be a constraint as it is experiencing mainly a surplus (Table 1), though high opportunity costs may still be incurred.
- ⊗ Government's objective → if the government's purpose is to prioritise equity over efficiency, then perhaps the shared responsibility approach is not the best approach as it is only a partial subsidy as opposed to a full fledged subsidy approach. However, the **shared responsibility approach** may be considered relatively more efficient than other **policies such as MediFund and full subsidy** as it reduces the risk of **overconsumption of healthcare**.
- ⊗ **Extent of information that government possesses** → may lead to over/ under subsidisation of healthcare → this is minimised by the shared responsibility approach → may then be considered as the best policy
- ⊗ **Root cause** → if healthcare is seen as a merit good, then the root cause would be imperfect information → education & campaigns would be the best approach in solving the information failure. However, in the context of SG, the main source of

<p>market failure in the healthcare market could be inequity instead, and hence perhaps subsidy/ shared approach etc may be a better approach.</p> <p><i>Or any other possible synthesis points, as long as they are relevant and appropriate in the context of the question.</i></p> <p><u>Overall conclusion:</u> Since there are pros and cons in each policy suggested, this implies that there is no best approach to the healthcare market. Perhaps, it would be wise for a rational government to implement a plethora of complementary policies instead of relying on 1 as the best approach. This is supported by Extract 4, which states that “having the right policies that nimbly address the different motivations and needs of various income groups is vital”. Also, Extract 4 proposes making refinements /tweaks to the current existing policies, such as revising Medisave withdrawal limits via means-testing approach (e.g. “meets the needs of those who need it most”). This can perhaps better target the equity issue (e.g. “empowering self-reliance with <i>targeted</i> support”), and hence solve the sources of market failure in a more concerted manner.</p>		
L3	An answer that explains how shared responsibility may be the best approach for healthcare market in Singapore.	6-9
L2	<p>An answer that only explains how 1 policy rigourously on how shared responsibility may be the best approach for healthcare market in Singapore.</p> <p><i>OR</i></p> <p>An answer that explains 2 policies (but briefly) on how shared responsibility may be the best approach for healthcare market in Singapore.</p>	3-5
L1	A vague, descriptive or list-like answer on the different types of policies or policies that did not link to shared responsibility nor address the question.	1-2
EV	Well-reasoned evaluative comments on whether the shared responsibility is the best policy for the healthcare market and consideration of existing issues like increasing budget deficit that country is facing which may limit the effectiveness of the proposed policies, root cause, extent of information that government possesses etc.	Up to 3m

### Suggested answers for CSQ2

(a)	(i)	With reference to Figure 1, state what happened to the average exchange rate of the Singapore dollars between 2015 and 2018.	[1]
		Depreciated [1]	
	(ii)	With the aid of a demand and supply diagram, explain one possible reason for the change observed in a(i).	[3]
		<ul style="list-style-type: none"> <li>Positive GDP growth (Table 3) → increasing national income → increase purchasing power → increase demand for imported goods → increase supply of SGD in exchange for foreign currency to buy imported goods [1], assume ceteris paribus → surplus of SGD in foreign exchange market [1] → depreciation of SGD</li> <li>Diagram [1]: rightward shift of SS of SGD</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>Increase in GPL of SG gds &amp; svs (positive inflation rates in 2017-2018 in Table 3) → <math>P_x \uparrow \rightarrow m.t.p \downarrow Q_{dx}</math>, assuming demand for SG exports is price elastic → <math>X \downarrow \rightarrow</math> foreigners' spending on SG exports fall → decrease in demand for SGD [1], assume ceteris paribus → surplus of SGD in foreign exchange market [1] → depreciation of SGD</li> <li>Diagram [1]: leftward shift of DD of SGD</li> </ul> <p>Note: Can accept any other plausible reason.</p>	
(b)		To what extent can it be concluded from Table 3 that the standard of living in Eurozone in 2018 is better than in 2015?	[7]
		<p><b>Define SOL</b></p> <ul style="list-style-type: none"> <li>SOL is classified into material and non-material well-being where material well-being is the amount of goods and services enjoyed by the individuals in the economy while non-material well-being involved how quality of life is affected.</li> </ul> <p><b>Thesis: Explain how data suggest how the living standards of Eurozone has improved.</b></p> <p><b>SOL in Eurozone has improved.</b> From Table 3, growth rates is increasing at a decreasing rate for some of the periods but <u>growth rates are positive</u> for majority of the periods. This suggest that GDP is still increasing over the years just that the extent of the increase is smaller in certain years such as 2016 and 2018 but not sufficient for us to see <b>slow growth is happening</b>. The positive growth rates suggest that rate of increase in amount of goods and services increases and material well-being of citizens rises. More jobs are created and there is also increase in wage growth. The economy is also less susceptible to negative shocks. This is further supported by Extract 5 where</p>	

	<p>growth is said to rise fastest. This suggest that business confidence has improved, which higher investment rate, which supports material SOL is higher.</p> <p>Also, the GINI coefficient that is close to zero and smaller over the years suggest that income distribution is relatively equal and hence a rise in real GDP per capita could mean that SOL for the majority should increase not only the minority rich.</p> <p>Moreover, there is a <u>fall in unemployment</u> → increase in jobs and income → able to buy more goods and services thus improving material SOL. Also, lower unemployment → less social problems, less stress from being unemployed → improve <u>non-material SOL</u>. The lower unemployment rate also lower government spending which is supported by the decrease in budget deficit (% of GDP). Furthermore, <u>inflation rate has increased but it still fall under the healthy range of below 3%</u>. This reflects price stability which increases investors' and consumers' confidence and increase real income which increase material well-being.</p> <p><b><u>Anti-Thesis: Explain living standards of Eurozone may not have improved because there are data that prove otherwise and insufficient data to ascertain.</u></b></p> <p>Also, the <u>unemployment rate is high</u> at above 5% rate for both periods. Although unemployment rate has improved, the level is still in an unhealthy range which reflect that there are spare resources in the economy and a wastage of resources. Hence, standard of living may not increase.</p> <p>Moreover, there are insufficient data to ascertain that SOL has improved.</p> <p>i) Real GDP figures are not presented A rise in nominal GDP per capita may overstate the change in SOL as it may be due to an increase in GPL and not actual production. High Inflation as reflected by rising general price levels → higher general price level of goods and services → consumers having lower real purchasing power → lowering their ability to purchase goods and services → lower quantities of goods and services consumed → lower material SOL.</p> <p>ii) Not sufficient to assess non-material SOL SOL is made up of both material and non-material wellbeing. There is a need to include more indicators such as PSI, literacy rate, life expectancy, etc. to take into pollution levels or stress levels which are better able to assess Eurozone's non-material SOL. For instance, high growth rate through rapid industrialisation and long working hours can increase pollution and stress which worsen health of individuals. This reduce quality of life.</p> <p>(Choose one) <b><u>Conclusion: Address question intent on SOL.</u></b></p> <p>There are missing data on indicators such as CO2 emission, stress levels and life expectancy to have accurate assessment on the quality of life of Europeans over the years. Moreover, the GDP growth rates indicates the material well- being of the</p>	
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	<p>country. It does not show tell us whether individuals are better off because it does not inform us about the income distribution.</p> <p>Even so, the <b>majority of the data suggest that the SOL of Eurozone</b> has improve. For instance, Gini coefficient showed a downward trend and other than unemployment rate, all other indicators are in the ideal range. To have a more accurate measurement of the data, there needs to be a composite indicator such as the <b>Human Development Index</b> to better inform us. The HDI measures the real GNP per capita, life expectancy and educational attainment.</p> <p>A higher real GNP/capita, longer life expectancy and higher education attainment would be reflected by a higher HDI. A higher GNP/capita reflects higher material well-being. Longer life expectancy indicates the ability of the people in the country to lead a long and healthy life while a higher education attainment indicates the ability of the people to acquire knowledge and hence, get better job opportunities and obtain higher job satisfaction. This ensure better quality of life.</p> <table border="1"> <tr> <td>L2</td> <td>Well-developed, balanced explanation on how the SOL of Eurozone has improved based on Table 3</td> <td>4-5</td> </tr> <tr> <td>L1</td> <td>Undeveloped, balanced explanation on how SOL of Eurozone has improved</td> <td>1-2</td> </tr> <tr> <td>EV</td> <td>Well-reasoned evaluation that considers whether there is sufficient data to suggest improvement in SOL</td> <td>Up to 2 marks</td> </tr> </table>	L2	Well-developed, balanced explanation on how the SOL of Eurozone has improved based on Table 3	4-5	L1	Undeveloped, balanced explanation on how SOL of Eurozone has improved	1-2	EV	Well-reasoned evaluation that considers whether there is sufficient data to suggest improvement in SOL	Up to 2 marks	
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(c)	<p><b>With reference to Extract 5 and using AD/AS analysis, explain and comment on how “higher energy prices and a stronger euro may be headwinds to growth this year”.</b></p>	[8]									
	<p><b><u>Interpret ‘headwinds to growth’</u></b></p> <p>Headwinds to growth meant that there is slow growth or decrease in growth in the economy.</p> <p><b><u>Explain how higher energy prices and stronger euro will reduce growth.</u></b></p> <p>From extract 5, the <u>stronger euro</u> will increase external value of euro which cause price of exports in foreign currency to increase and price of imports to fall. This reduces export demand and increases quantity demanded of imports. Assuming Marshall Lerner condition holds where <math>(PED_x + PED_m) &gt; 1</math>, there will be a fall in net exports and hence AD falls. Since <math>(X-M)</math> is a component of aggregate demand, AD falls. The fall in AD will increase inventories and reduce production of goods and services. This reduces employment of factors of production. Real output falls. This <b>threatens growth in Euro.</b></p> <p>Furthermore, the <u>higher energy prices</u> suggest that unit cost of production is higher. Firms driven by profit-motive respond by increasing the prices of their goods and</p>										

	<p>decreasing their output level. This is represented by a reduction of SRAS. This increases general price level and reduces real output which <b>worsens the growth in Euro.</b></p> <p><b><u>Comment how higher energy prices and stronger euro may not reduce growth.</u></b></p> <p>The extent of fall in AD due to <u>stronger euro</u> is <u>dependent on the size of external demand</u>. If external demand is small, there will be an insignificant fall in AD and hence growth rate. With stronger euro, prices of imported goods fall. This is likely to be the case since the domestic demand is large and the Eurozone will provide sufficient demand for goods and services.</p> <p><u>If EU countries is reliant on imported raw materials</u>, this will reduce unit cost of production and increase SRAS. This reduces imported inflation and increases real output. Furthermore, if there is discovery of alternative energy sources, the higher energy prices will not persists in the long term and this will not cause a fall in real output. <b>Hence, growth may not reduce significantly.</b></p> <p><b><u>Overall judgment:</u></b> Overall, the positive business and consumer sentiments due to the domestic factors should cause an overall increase in growth. The extent of increase in AD due to stronger global growth and quantitative easing programme in Extract 5 is huge. Moreover, the indicators in Table 3 has generally showed an improvement in SOL over the years as elaborated in part (b). While stronger euro and higher energy prices will decrease growth, the overall impact on growth will still be positive.</p> <p><b><u>Marking Scheme</u></b></p> <p><b>Up to 5 marks</b> for an how higher energy prices and stronger euro will affect growth in country</p> <p><b>Up to a further 3 marks</b> on how likely higher energy prices and a stronger euro will pose headwinds to growth</p> <p>To get full 8m [they need to look at both changes in AD and AS and how growth is affected with judgement on the final impact of growth.]</p>	
(d)	<p><b>With reference to Extract 8, identify and explain the main types of unemployment in Singapore.</b></p>	[6]
	<p>1. Demand-deficient unemployment [1]</p> <ul style="list-style-type: none"> <li>• is due to a fall in the aggregate demand for labour caused by an economic recession, and wages being sticky downward.</li> <li>• <b>Extract 8: ... slowing economy...</b> lacklustre sentiment has stunted job creation and prompted a wave of layoffs</li> <li>• <b>Poor economic outlook</b> → fall in C and I → AD falls [1] → firms are unable to sell their current level output → cut back on production reducing the amount of labour they employ → fall in <math>AD_L</math> + wages are sticky downwards [1] → real wage remains constant and creates surplus of labour [1]</li> </ul> <p>Note: Students can explain with the aid of diagram.</p>	

	<p>2. Structural unemployment [1]</p> <ul style="list-style-type: none"> <li>• is caused by the changing pattern of demand or supply in the economy.</li> <li>• Extract 8: ... skills mismatches in the labour market are on the rise due to the unrelenting technological change that leave old skills outmoded... moving towards higher value-added, niche sectors... require specialised skills that most retrenched PMETs do not have and it may take a while to acquire...</li> <li>• SG moving towards higher value-added, niche sectors that require specialised skills in medical technology and data analytics → retrenched workers from 'sunset' industries like manufacturing sector do not have the require specialised skills → unable to gain employment in the 'sunrise' industry → remain unemployed [1]</li> </ul>	
(e)	<b>Explain the impact of higher unemployment on employees, the government and an economy.</b>	<b>[8]</b>
	<p>The unemployment rate is three times higher in Eurozone as compared to Singapore. The unemployment rate remains around the healthy range of around 3-5% in Singapore while there is a decline for Eurozone. It is important to keep unemployment rate within the healthy range because it affects different agent of an economy, which is the individuals, firms and economy. We will look at the negative and positive impacts of unemployment on different agents of an economy.</p> <p><b><u>Devt (1) Negative impacts of higher unemployment</u></b></p> <p><b>i) <u>On the economy</u></b></p> <p><b>1. Loss of output</b></p> <p>Most significant disadvantage is the opportunity cost involved:</p> <p><b>Unemployed people → lower output</b></p> <p>Under-utilisation of resources</p> <p>→ Loss in potential output</p> <p>→ operating inside PPC</p> <p>GDP is lower than it should be because of the idle resources in the economy.</p> <p><b>2. Decline in investment and implication on potential growth</b></p> <p>With the rising youth unemployment due to mismatch of skill sets in Eurozone and structural unemployment due to technology advancement in Singapore → increase idle labour resource as young graduates and less educated young workers are not taking on the available factories jobs → loss of output as these idle labour can be utilised to achieve higher output, hence resulting to a lower than expected actual economic growth. In addition, workers are skill set and knowledge become obsolete</p>	

	<p>and de-motivate workers to work in LR → fall in productivity level and efficiency → production capacity fall → LRAS to fall → reduce potential growth.</p> <p>Government's macro-aim of high and sustainable economic growth is not achieved → worsens economic health of a country</p> <p>Slowdown in actual (GDP) growth</p> <ul style="list-style-type: none"> <li>→ Households earn lower income</li> <li>→ less purchasing power</li> <li>→ able to consume fewer goods and services</li> <li>→ Lower material standard of living</li> </ul> <p><b>3. Undermine consumer and investor confidence</b></p> <p>Job insecurity increases with higher unemployment which result to lower consumer confidence and hence fall in C. With consumer who are unwilling to spend, firms will face falling demand and profits. Firms will reduce expected return from investment and I will fall. With both C&amp;I falls, this will cause a greater fall in AD and hence negative growth and unemployment.</p> <p>ii) <b><u>On the government</u></b></p> <p><b>1. <u>Impact on government budget</u></b></p> <p>Larger government resources required to restructure the economy to solve unemployment problem hence worsen budget position</p> <p>Budget deficit in recent years:</p> <ol style="list-style-type: none"> <li>1. ↑ expenditure on training subsidies, unemployment-related benefits, health and to combat increased crime rate;</li> <li>2. ↓ personal income &amp; corporate taxes.</li> </ol> <p>→ More difficult for govt to pursue other development projects due to lower revenue from direct and indirect taxes. As the unemployed does not pay income tax and pay less goods and services tax, government's tax revenue will fall.</p> <p>As shown in Table 3, budget position of Eurozone improve as unemployment falls over the period.</p> <p><b>2. <u>Distribution of income becomes more uneven.</u></b></p> <p>The group that are most badly affected are the older &amp; less skilled workers retrenched mainly from the low value-added manufacturing industry → loss of income → lowers material aspect of SOL. Government is thus faced with worsening market failure due to increasing inequity.</p>	
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	<p>iii) <u>On employees</u></p> <p><b><u>Those who are employed → more productive</u></b></p> <p><b>1. Unemployed → loss of income → lower purchasing power → lower material well-being</b></p> <p><b>2. Loss of status + stress of being unemployed → lower non-material well-being</b></p> <p>This is supported by <u>Extract 8</u> where increase in individuals taking on psychological services due to job changes. The severity of unemployment will depend on the duration of unemployment. This is because workers will be more discouraged if they cannot find jobs for extended period of time. Deskilling will happen where skills that they possessed will be obsolete and they will no longer be actively looking for job and drop out of the labour force as supported by Extract 6. This is likely to be a serious problem for Eurozone where youth unemployment is on its high.</p> <p><b>3. Distribution of income becomes more uneven</b></p> <p>The group that are most badly affected are the older &amp; less skilled workers retrenched mainly from the low value-added manufacturing industry → loss of income → lowers material aspect of SOL as supported by Extract 8. Government is thus faced with worsening market failure due to increasing inequity</p> <p><b>Ranking the consequences of a higher rate of unemployment</b> <i>[Not required in this question but is required as evaluative point if the question is higher order thinking question with the command words like “discuss”]</i></p> <p>Wastage of resources is the most significant consequence due to its pervasiveness – it affects many economic agents. With a higher rate of unemployment, more resources are wasted as the economy experiences negative economic growth. There is a need for government intervention if unemployment rate is high and increasing and is especially worrying if it is due to structural unemployment where it is a long term unemployment as the impact persist in the long term.</p>	
(f)	<p><b>Discuss the extent to which a government from the Eurozone should adopt the policies implemented by the Singapore government to achieve both economic growth and low rate of unemployment.</b></p>	[12]
	<p><b><u>Problems encountered by the Eurozone e.g. Greece and Spain:</u></b></p> <ul style="list-style-type: none"> <li>• sustained EG but expected to slow down due to “higher energy prices and a stronger euro” (Extract 5)</li> <li>• high rate of unemployment (structural unemployment), especially youth unemployment</li> </ul>	

**Policies implemented by the SG gov't (Extract 9):**

- SS-side policy (interventionist) → retraining: “provide a skilled workforce that continues to take up training”
- DD-mgmt policy (fiscal policy) → “higher government spending on research and technology”
- Trade policy → FTA: “integrated and global digital economy by co-developing international trade rules ...” [Free Trade Agreements help to promote sales of exports in foreign countries hence  $X \uparrow \rightarrow AD \uparrow \rightarrow \dots$  (adjustment process) → real o/p  $\uparrow \rightarrow$  actual growth +  $\downarrow$  demand-deficient unemployment]

**Explain how any 2 adopted policies work + strength(s) & limitation(s) (contextualised to the Eurozone) → must link to both EG (AG + PG) and/or unN+**

- **SS-side policy (interventionist) → retraining: “provide a skilled workforce that continues to take up training”**

What is it:

- Gov't can provide subsidies for education and training. Education and training aim at increasing labour mobility and labour productivity.

How it works:

- With retraining, labour productivity increases, allowing workers to be more employable. Equipped with more relevant skills, this will help to reduce the mismatch of skills and thus, improve labour mobility across industries.

How well it works:

**Strength**

- able to deal with their structural unemployment + youth unemployment as it equips the youth with more skills to join the industries as the main cause of the high youth unemployment is due to lack of skills (Extract 5)

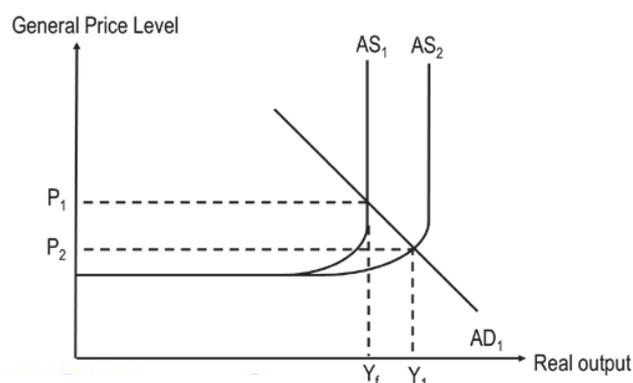


Diagram 12: Impact of Supply-side policies on potential growth

- **Training increases the skills of labour**, leading to increases in labour productivity. Workers will be able to produce more output per man hour. This increases individual market supply curves. If enough individual supply curves are impacted, total output that the economy can produce increases. Productive capacity of the economy increases. AS shifts right from AS1 to AS2, leading to potential economic growth.

	<ul style="list-style-type: none"> <li>○ Assuming that there is a certain level of AD, real national output increases from OYf to OY1, resulting in actual economic growth.</li> <li>○ Able to boost both actual and potential growth by attracting more FDI</li> <li>○ May also help to achieve inclusive growth as the displaced workers now have the skilled to gain employment again.</li> </ul> <p><b>Limitation</b></p> <ul style="list-style-type: none"> <li>○ Supply-side policies are costly, their outcomes seen only in long-term and often these outcomes are uncertain. Policies requiring education and training requires significant investments and have high opportunity cost. Since Greece and Spain were suffering from debt crisis, the government will not be able to finance the spending and if they do, they will need to divert spending from other developmental projects. Some other public amenities will have to be given up which may affect the standard of living of their people.</li> <li>○ Financing of the education and training subsidies might also require the government to raise taxes, which would result in unintended consequences. An increase in personal income tax would lead to lower disposable income and lower opportunity cost of leisure thereby creating a disincentive to work. Similarly, an increase in corporate tax could discourage investment as the after-tax profits would be lowered. All of these could lower the production capacity of the economy, thereby lowering national income and output, resulting in negative economic growth. As seen in Table 3, the Eurozone is already experiencing slowing growth so it might be possible that the growth might slow down even more if the govt finances it via raising taxes.</li> <li>○ It also takes time to improve literacy &amp; numeracy skills, and to complete an apprentice or a degree! Hence, it will take several years before improvements in education and training result in higher labour productivity. In addition, the effectiveness of this measure is more uncertain. Thus this may not be an effective policy to deal with the pressing high youth unemployment in the short run and “very hard for the Government or employers to force workers down a particular skills pathway, because everyone has different abilities” [Extract 8] → workers may not be receptive to retraining</li> </ul> <ul style="list-style-type: none"> <li>● <b>DD-mgmt policy (fiscal policy) → “higher government spending on research and technology”</b>  <u>What is it:</u> <ul style="list-style-type: none"> <li>○ Fiscal policy refers to the use of government spending and taxation to achieve the macroeconomic policy objectives such as high and sustained economic growth, low and stable inflation, full employment and a healthy balance of payments.</li> </ul> <u>How it works:</u> <ul style="list-style-type: none"> <li>○ Expansionary fiscal policy may be employed to reduce demand deficient unemployment. This involves reducing taxation and/or increasing government expenditure.</li> </ul> </li> </ul>	
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- A rise in government spending on public projects like research and technology will raise AD directly via a rise in government expenditure.
- Hence, an expansionary fiscal policy raises AD via the increases in G. This increase in AD, from AD1 to AD2 as depicted in diagram 1a promotes actual economic growth via the multiplier process. Real national output increases from Y1 to Yf.
- Potential growth may also be realised in the long run as there is an increase in AS due to the improvement in quality of factors of production when there is innovation via R&D.

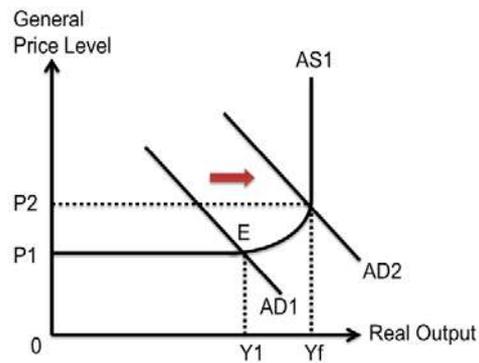


Diagram 1a: Effect of Expansionary Fiscal Policy

- Diagram 1b depicts demand deficient unemployment in an economy represented by the horizontal distance of  $L_D L_s$  due to sticky wages at  $W_1$ . When the real output rises, firms produce more goods and services. As such, they need to hire more factors of production like labour to produce these goods and service. Since labour is a derived demand, the demand for labour rises. This is represented in diagram 1b by a rightward shift in aggregate demand for labour from  $AD_{L1}$  to  $AD_{L2}$  bringing about an increase in employment from  $L_d$  to  $L_s$ . Demand deficient unemployment is eliminated. Unemployment rate falls.

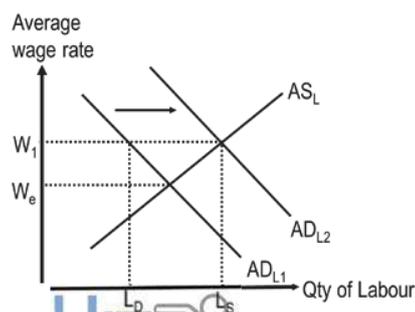


Diagram 1b: Reduction of Demand-deficient unemployment via expansionary fiscal policy

How well it works:

**Strength**

	<ul style="list-style-type: none"> <li>○ Thus, expansionary fiscal policy shifts AD to the right, promoting actual economic growth. There is an inverse relationship between changes in real national output and unemployment rate. Increases in real output leads to falls in unemployment rate.</li> <li>○ Hence, expansionary fiscal policy reduces demand-deficient unemployment.</li> <li>○ Able to boost both actual and potential growth by attracting more FDI.</li> <li>○ If the R&amp;D is in terms of green technology, it may help to achieve sustainable growth as the increase in output will not cause as much harm to the environment via lower emissions of pollutants or greenhouse gases. There may also be improved methods of production that make use of lesser raw materials thus leading to a slower rate of depletion of resources, allowing a more sustainable rate of growth.</li> </ul> <p><b>Limitation</b></p> <ul style="list-style-type: none"> <li>○ If AD increases too fast such that AD is persistently greater than AS, demand-pull inflation will result. Demand-pull inflation is defined as a situation where AD is persistently greater than AS, close to or at full employment of all resources. The excess demand cannot be met because existing resources are fully or almost fully employed. This will bid up prices of real output, causing demand-pull inflation. This may be worrying for Eurozone as the inflation rate was already on the rise [Table 3].</li> <li>○ Another unintended consequence of using fiscal policy is the crowding out effect. If the increase in government spending is financed by borrowing, it will be competing with the private sector for funds. This increase in demand for funds creates an upward pressure on interest rate which rises. Higher interest means higher cost of borrowing, discouraging firms from investing (reducing I) and individuals from buying on credit (reducing C). Thus, we say government expenditure crowds out private expenditure. In the extreme case, the fall in consumption and investment may completely offset the rise in government expenditure, with the result that AD does not rise at all. Hence, government's attempt to tackle negative growth may be rendered ineffective.</li> <li>○ If government increases spending and reduces tax rates, in an attempt to promote economic growth through increasing AD, there is a risk of government running into budget deficit. A budget deficit in any one year is where government's expenditure (including benefits) exceeds its revenue from taxation. If the government runs persistent deficits over many years, these debts will accumulate. In order to finance these debts, government may resort to borrowing, which may further enlarge its national debt to service. The government may also need to increase the tax rate in future, which may result in the unintended consequences of disincentive effects on work. Thus, labour productivity rate may fall in the future and hinder potential growth. Too huge a government debt weakens investor confidence which may lead to capital flight. It also reduces credit rating of the country making it more difficult &amp; expensive (may have to pay higher interest rates) for a country to borrow money to finance its expenditure. This slows down the progress of the economy.</li> </ul>	
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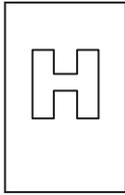
**Evaluative conclusion: (Similarity to characteristics + Nature of issue)**

What policies a country should implement or adopt depends on the nature of the economy and the economic situation of the economy. Although the Eurozone may find that adopting the policies may help in their youth unemployment problem and in boosting growth, the policy decision to increase G might be constrained by a government's fiscal position. The Eurozone is suffering from a slightly higher budget deficit as compared to SG (except for 2018) → some member states also suffering from budget deficit hence may not have sufficient funds to provide retraining or spend on research and technology which may worsen their budget deficit → may cause consumers and investors to lose confidence in the economy which they have managed to build up over time.

However, Extract 5 mentioned "confidence had been hitting record levels since the crisis years in the Eurozone and unemployment was down to pre-crisis levels" hence this shows that although the countries in Eurozone might have problem adopting the policies due to limited budget, the situation is improving hence the scale of implementation of the policies may not need to be so big. Hence the countries in Eurozone may still adopt the policies but to a limited extent, depending on the amount of funds they can afford to spend. They should be adapting where appropriate.

L3	Well-developed, balanced answer with good contextualisation to the Eurozone.	6-9
L2	Well-developed one-sided answer covering at least 2 policies, with limited contextualisation to the Eurozone. Or  Well-developed balanced answer covering only 1 policy, with limited contextualisation to the Eurozone. Or  Under-developed, balanced answer covering at least 2 policies, with limited contextualisation to the Eurozone.	3-5
L1	An answer that merely identifies the policies implemented by SG govt.	1-2
E	Valid evaluative comment. This should focus on whether the Eurozone should or should not adopt SG policies and reason(s) to justify.	1-3





TEMASEK JUNIOR COLLEGE  
Preliminary Examination 2019  
General Certificate of Education Advanced Level  
Higher 1

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## **ECONOMICS**

Paper 1 Case Study

**8823/01**

**Thursday 29 August 2019**  
**3 hours**

Additional Materials: One 12 Page Answer Booklet, one piece of writing paper for rough work

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### **READ THESE INSTRUCTIONS FIRST**

**Do not turn over until you are told to do so.**

Write your name and CG number on all the work you hand in.

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

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

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

Rough work can be done directly on the question paper, on the extra piece of writing paper, or in the answer booklet. If rough work is done in the answer booklet, cross it through before handing it in.

Answer **all** questions.

Indicate the question number clearly in your answers.

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

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



**Temasek Junior College**  
**Economics**

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Answer **all** questions.

**Question 1: More of Wire-less? – The Market for Wireless Data**

**Table 1: 500MB Mobile Data Prices (in US Dollars)**

	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>Singapore</b>	11.99	11.84	7.27	7.24	7.24
<b>India</b>	3.38	3.24	4.04	2.53	2.78
<b>United States</b>	65.32	48.94	38.11	54.44	21.76

Source: *International Telecommunication Union Database*

**Extract 1: Asia’s digital economy is booming. So why are Singtel and Co struggling?**

A rude shock came after Singtel reported its net profits had fallen 43 per cent to S\$3.1 billion in the year to March – a 16-year low for the firm. Singtel chairman Simon Israel blamed the results on a “perfect storm” of intense competition and rising economic uncertainty. Telecommunication companies (Telcos) supply the internet economy’s very lifeline: connectivity and mobile data. Yet rather than riding the same wave of success, many are struggling. A large part of why the internet economy has taken off in such a big way is the falling costs of access, particularly mobile data. Market liberalisation in the Telco space started in the 2000s and has accelerated in the past few years. With more competitors flooding the market, Singapore now has 11 Telcos.

For now, the winners are the consumers. Singaporean undergraduate Xander Lim, for instance, is enjoying the battles between new and old players. His mobile phone is the first thing he reaches for when he wakes up, and it’s the last thing he checks before closing his eyes. While commuting to school, the 23-year-old is either listening to music on Spotify, reading Instagram updates or watching Netflix on his iPhone XS. “Data is dirt cheap so it’s not an issue downloading the stuff I want to watch,” he says.

Source: *South China Morning Post*, 13 July 2019

**Extract 2: Cheap data drives boom in Internet access in India**

India is bucking a global trend of decline in the growth of Internet access. India rose on the Affordability Drivers Index from 23rd rank in 2015 to eighth this year. India also scored the highest of all 61 countries studied for market competition in mobile telephony, which has helped mobile data costs plummet. This competition among Indian telecoms firms has intensified following the entry of Reliance Jio, a firm owned by Mr Mukesh Ambani, one of the world’s richest businessmen. It today offers a mobile data package for as little as 99 rupees (S\$2) that is valid for 28 days and offers 14GB of data.

The cheap mobile data access is in turn driving smartphone sales in India - more among males than females. Counterpoint Research says more than a billion smartphones will be sold in India over the next five years, taking the number of its users beyond 700 million by 2022. The number of Internet users is also projected to go up from 481 million last year to 762 million in 2022, according to the Internet and Mobile Association of India.

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Mr Osama Manzar, the founder and director of the Delhi-based Digital Empowerment Foundation, says cheap and accessible Internet is boosting access to educational and entertainment content, as well as government services. "One cannot avail a single government service today without online intervention. This posed a big hindrance but the process has become much easier with more points of cheap Internet access in villages," he adds.

Source: *The Straits Times*, 29 November 2018

### Extract 3: Why USA's mobile data plans are the most expensive on earth

A new study has found that US wireless consumers pay some of the highest prices for mobile data in the developed world. According to a new study from Finnish research firm Rewheel, the US mobile data market has the fifth most expensive price-per-gigabyte smartphone plans among developed nations, and was the most expensive for mobile data overall.

Critics have pointed to high prices to connect to cellular towers that impact pricing for the end user and smaller competitors. They have also argued that the US government's Federal Communications Commission recently made these problems worse by lifting price caps on this uncompetitive sector.

Source: *Tech by Vice*, 21 Nov 2018

**Table 2: Comparison of USA mobile data plans**

Carrier	Unlimited data monthly cost	Data limit	Hotspot allowance*	Bundled streaming services included^
Sprint Unlimited Basic	\$60	50GB/month	500MB at LTE speeds	Hulu
T-Mobile Essentials	\$60	50GB/month	Unlimited 3G data speeds only	none

\*hotspots allow for the use of Wi-Fi instead of mobile data at certain locations. The fastest speed available for hotspots are LTE speeds.

^streaming services allow consumers to tap on third party apps for TV shows, music etc. 'Hulu' is a movie / TV shows streaming service.

Source: *c/net*, 4 Sep 2018

#### **Extract 4: Wireless@SG**

Surfing speeds on Singapore's free public Wi-Fi service Wireless@SG will be more than doubled to 5Mbps by the end of this year, as the Government sees the network as a key enabler of Singapore's Smart Nation vision.

"We must build first-class infrastructure for pervasive, seamless and high-speed connectivity to benefit citizens and businesses," Minister of State for Communications and Information Janil Puthuchery said, in announcing the upgrades in Parliament yesterday. He also added that Wireless@SG's current speed is faster than most public Wi-Fi services around the world. But because demand is increasing, there is a need to boost current speeds.

Singapore will also have the highest hotspot density in the world, calculated by the number of hotspots per inhabitant. Currently, it trails only Tokyo. Coverage expansion will target congested places such as hospitals, government buildings and community centres so more people can connect to the network without surfing slowdowns, a common bugbear. More public places such as hawker centres, train stations and retail malls will also be added to the list of Wireless@SG zones.

"But it is not the connectivity that makes us smart; it is what we do with it," said Dr Janil. "Operators can also use Wireless@SG to offer improved services such as cashless payment and location-based analytics. All this benefits consumers, businesses, and productivity."

One group of beneficiaries is low-income users. The idea is to allow Wireless@SG to complement existing efforts to bridge the digital divide between those who can afford the good and those who might not be able to.

Source: *The Straits Times*, 12 April 2016

#### **Extract 5: Economics of public Wi-Fi**

The basic economic objection to free public Wi-Fi is that any benefits to low income is unlikely to be realised. Free public Wi-Fi is unlikely to be strong in all areas and therefore locations with stronger Wi-Fi signals will simply bid up existing land and building prices.

Any benefit due to the free public Wi-Fi will be compensated by higher prices for local services (such as cafes and short-stay accommodation). For this reason, the target population of the free public Wi-Fi, which is presumably the lower income group, may experience no net benefit once general prices of the goods and services in any area is taken into account. The main beneficiary at the end of the day may just be the landlords in the area serviced by the free public Wi-Fi.

Source: *Journal of Telecommunications and the Digital Economy*, February 2014

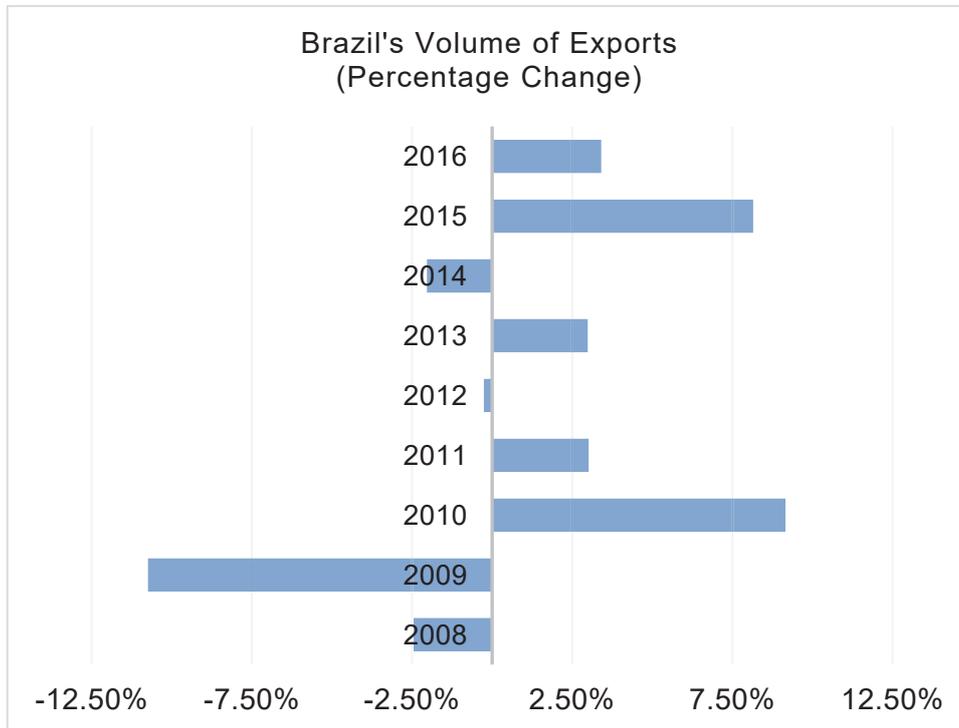
**Questions**

- (a) (i) With reference to Table 1, compare the trend in mobile data prices in Singapore, India and the United States from 2013 to 2017. [2]
- (ii) Explain and comment on the likely impact of the events in Extract 1 on the revenue of Singapore's mobile data providers. [9]
- (iii) With reference to Extract 1, explain a function of price that influences consumer behaviour. [2]
- (iv) From Extract 2, identify a related market to mobile data and explain how the general trend in mobile data prices in (a)(i) would affect the related market. [4]
- (b) Using a diagram, explain the effect of the US government's action in Extract 3 on the consumer expenditure for mobile data plans. [4]
- (c) Suppose a US consumer is thinking of buying the '*Sprint Unlimited Basic*' data plan.  
Discuss the factors that the consumer should consider when making the above decision. [8]
- (d) (i) Explain why public Wi-Fi is considered to be a private good. [4]
- (ii) Discuss whether governments should follow Singapore's example of providing free public Wi-Fi. [12]

[Total: 45]

## Question 2: The Economics of Sports

**Figure 1: Change in export volume in Brazil (2008 to 2016)**



Source: *The World Bank*, accessed August 2019

### **Extract 6: On your marks, get set, wait: traffic jams clog Rio ahead of Olympic Games**

Special traffic regulations giving priority to athletes and VIP visitors to the Rio 2016 games have caused 20-kilometre traffic jams in the streets of Rio de Janeiro, days ahead of the opening ceremony.

City officials hope the congestion will be eased by a new metro extension, which opened on Monday – more than two years behind schedule. But for the duration of the Games, the gleaming new subway service will only be available to Olympic ticket and pass holders. Commuters will not be allowed to use the extension until the end of the year. The new metro is only a partial solution, however, because it stops more than 10 kilometres short of the Games venues. For the remainder of the journey, visitors will have to use buses or taxis.

To further reduce gridlock, schools will be closed for the duration of the Games and Mayor Eduardo Paes has declared four local holidays on key dates. Rio is the fourth worst city in the world for traffic jams, according to the TomTom Traffic Index. Even though the government has spent more than £800 million on new highways and rapid bus transport systems to alleviate the problems ahead of the Games, drivers often find journey times double or triple as a result of congestion, particularly around the Rodrigo de Freitas Lagoon (where the Olympic rowing will be staged) and on the road between the South Zone and Barra da Tijuca (the site of the Olympic Park).

Source: *The Guardian*, August 2016

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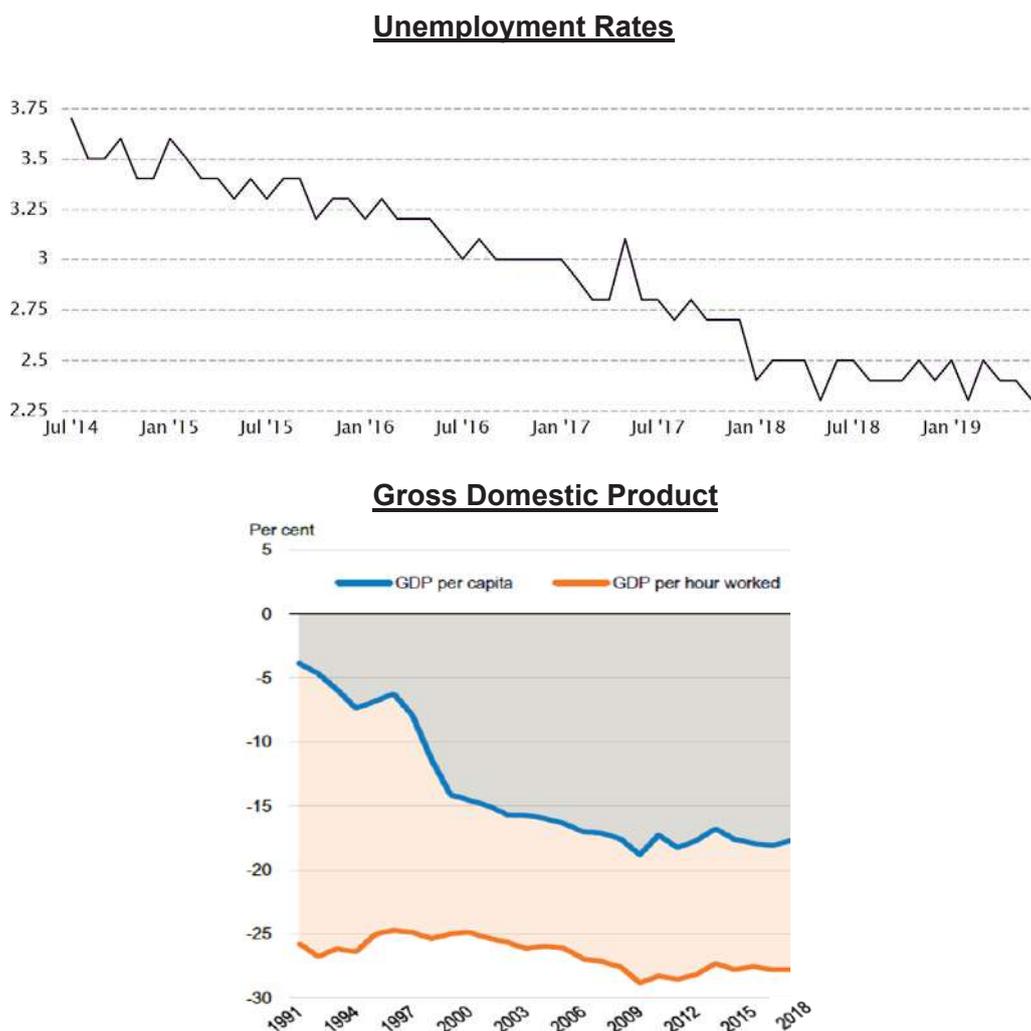
### Extract 7: A City Transformed

Since winning its bid for the 2016 Olympic Games seven years ago, Brazil's Rio de Janeiro has undergone a construction boom, including new sports venues, subway connections, and more infrastructure. One of the flagship transportation efforts, Rio built a new subway extension linking popular beach areas with the neighbourhood where the Olympic Park is located. Enormous investment has been pumped into transportation infrastructure projects throughout the city, including the VLT Carioca (the Rio de Janeiro Light Rail) in the port district. The rail connects Rio's domestic airport to a bus terminal and is aimed at revitalising the area.

The construction of the golf course, however, has stirred controversy. Golf is not widely played in Brazil, and though there is one small public course on the northern outskirts of Rio, Brazilian officials have touted the fact that after the Olympics, the course would become the first professional-quality public course in Brazil. But it was partially built on a protected nature reserve, angering local activists.

Source: *The Wall Street Journal*, August 2016

**Figure 2: Selected economic indicators for Japan**



Sources: CEIC data, Organisation for Economic Co-operation and Development

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### **Extract 8: Tokyo 2020 Olympics will come and quickly go, but the legacy is all-important**

The legacy of an Olympics refers to the benefits that a host city and country gains once the event is over. That can take the form of new stadiums, redeveloped urban areas and updated transport networks. The history of Olympic legacies is a mixed one, filled with cautionary tales of overspending and waste. Understandably, Tokyo is anxious to avoid a similar fate. The huge cost of staging an Olympics, and the potential economic dangers for a host city, has thrown the issue of legacy into sharp focus in recent years. That was never more evident than at last summer's Rio Olympics.

Transport was also the most recognisable legacy of the last time Tokyo hosted the Summer Olympics, with the debut of the shinkansen (high-speed rail) nine days before the start of the 1964 Games. Japan has hosted the Winter Olympics twice since then, in Sapporo in 1972 and Nagano in 1998. The 1998 Olympics prompted Japan to extend its shinkansen service from Tokyo to Nagano, cutting the three-hour journey in half. But the tourism boost that organisers hoped would follow failed to materialise, and the purpose-built hotels struggled to attract guests. "The shinkansen arrived and they built new roads, and it made Nagano closer to Tokyo," said Ezawa, who authored two books criticising the cost of the Nagano Olympics. "But with less traveling time, it also meant the amount of people staying in hotels here dropped. There was also a lot of damage to the natural environment in Nagano."

Source: *The Japan Times*, January 2017

### **Extract 9: Growth is coming home – How a successful World Cup will boost the British economy as Brexit looms**

Obviously, England winning the World Cup would be a brilliant achievement in isolation, putting to bed decades of jokes and generally imbuing Britain with a sense of sporting pride not seen since the 2012 Olympics. There's another reason, however, to hope that Gareth Southgate's boys bring back the trophy – the economy.

In the two years since Britain voted to leave the European Union, the country's economy has undoubtedly suffered. The pound dropped sharply, pushing inflation up. In tandem with stagnant wage growth, this created a scenario where workers were seeing their take home pay decreasing. That lowered the amount they were willing to spend, denting both consumer confidence and retail sales. As sales fell, the wider economy stuttered and growth stalled.

Things could improve in the second and third quarter of the year, and amazingly, the World Cup should be at least partially the reason why. The improving economic picture is one reason that three members of the Bank of England's Monetary Policy Committee – the body responsible for setting interest rates in the UK – voted to raise rates at its June meeting.

The argument is simple, when England play well in the World Cup, England supporters are happier and are more inclined to spend on non-essential items. Furthermore, when the World Cup in general is happening, Brits are more likely to host parties and barbecues, spending significantly more on groceries than they otherwise would do. People are, of course, more likely to go to the pub and buy drinks. Britain is generally a consumer powered economy, so when people are buying, growth accelerates.

Source: *Business Insider Singapore*, June 2018

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**Questions**

- (a) (i) With reference to Figure 1, describe the trend in Brazil's volume of exports from 2008 to 2016. [2]
- (ii) With the aid of a diagram, explain how the general trend above could have affected the external value of the Brazilian real. [3]
- (b) With reference to Extract 6, analyse how hosting the Olympics could result in market failure for the host country. [6]
- (c) Using Extract 7 and a production possibility curve diagram, identify and explain **two** benefits of hosting the Olympics to the host country. [6]
- (d) Assess how far the data provided suggest that hosting the 2020 Olympics will improve Japan's employment rate. [8]
- (e) Discuss whether the decision made by the Bank of England's Monetary Policy Committee (Extract 9) is appropriate for the UK economy. [8]
- (f) Using the information provided and/or your own knowledge, evaluate whether, on balance, a government should prioritise the pursuit of high rates of economic growth to raise the standard of living of its citizens. [12]

[Total: 45]

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H1 CSQ1

Suggested Answers

<b>(a)</b>	<p><b>(i)</b> With reference to Table 1, compare the trend in mobile data prices in Singapore, India and the United States from 2013 to 2017. [2]</p>
<p><b>General trend [1 mark]</b></p> <ul style="list-style-type: none"> <li>• Mobile data prices are generally falling for all 3 countries.</li> </ul>	
<p><b>Refinement [1 mark]</b></p> <ul style="list-style-type: none"> <li>• Mobile data prices fell by the greatest percentage in the US</li> <li>• Mobile data prices fell by the smallest percentage in the India</li> <li>• US and India experienced episodes of increase in mobile data prices but Singapore did not.</li> </ul>	
	<p><b>(ii)</b> Explain and comment on the likely impact of the events in Extract 1 on the revenue of Singapore’s mobile data providers. [9]</p>
<p><b>6 marks for providing a rigorous explanation</b></p> <ul style="list-style-type: none"> <li>• Total revenue for the producer is given by the product of price and quantity sold. [1]</li> <li>• "With more competitors flooding the market", there is now an increase in supply in the mobile data market. / The "intense competition" saw more firms enter the mobile data market giving rise to an increase in supply. [1] <ul style="list-style-type: none"> <li>○ Given that mobile data can be seen as a necessity as it provides access to the internet on the go, the demand for mobile data is likely to be price inelastic. [1] As a result, the rise in equilibrium quantity is less than proportionate to fall in equilibrium price, ceteris paribus, bringing about a fall in total revenue. [1]</li> </ul> </li> <li>• The "rising economic uncertainty" could have brought about lower willingness to purchase mobile data amongst the consumers and hence a decrease in demand. [1] <ul style="list-style-type: none"> <li>○ As a result, there is a fall in equilibrium price and quantity, ceteris paribus, giving rise to a fall in total revenue. [1]</li> </ul> </li> <li>• Taking into account both events, total revenue for the mobile data providers is likely to fall.</li> </ul>	
<p><b>3 marks for providing a relevant comment</b></p> <p><u>Possible Comment 1</u></p> <ul style="list-style-type: none"> <li>• <b>[Assumption]:</b> The demand for mobile data may not be price inelastic given the prevalence of free WIFI which makes it a close substitute.</li> <li>• <b>[Magnitude]:</b> The likely impact on the total revenue for mobile data providers would then depend on the relative change in demand and supply. Given that mobile data can be seen as a necessity as it provides access to the internet on the go, the willingness of Singaporeans to purchase mobile data may not decline to a large extent even in the light of economic uncertainty AND/OR there is close to a 3-fold increase in the number of telcos from the initial 3 large operators comprising Singtel, Starhub and M1 which suggests a large increase in supply.</li> <li>• <b>[Stand]:</b> The total revenue for the mobile data providers could actually have increased.</li> </ul>	

Possible Comment 2

- **[Stand]:** The extent of the fall in revenue is likely to decrease over time.
- **[Time frame]:** The demand for mobile data is likely to become more price elastic over time as free WIFI becomes a closer substitute as it becomes more prevalent in the long run.

Alternative Approach

**6 marks for providing a rigorous explanation**

- Total revenue for the producer is given by the product of price and quantity sold. [1]
- "With more competitors flooding the market", there is now an increase in supply in the mobile data market. / The "intense competition" saw more firms enter the mobile data market giving rise to an increase in supply. [1]
- The "rising economic uncertainty" could have brought about lower willingness to purchase mobile data amongst the consumers and hence a decrease in demand. [1]
- There will be a fall in equilibrium price and an indeterminate change in equilibrium quantity, and consequently, an indeterminate change in total revenue for mobile data providers. [1]
- The extent of the fall in demand could arguably be greater than that of the increase in supply. Given the "rising economic uncertainty", consumers may experience a large degree of reservation in committing to mobile data plans, especially those with larger allowances, resulting in a large decline in willingness to purchase. [1]
- As a result, total revenue for the mobile data providers is likely to fall.

**3 marks for providing a relevant comment**

- **[Stand]:** Total revenue for firms could rise instead.
- **[Situation]:** The extent of increase in supply could well be greater than that of the fall in demand as there is close to a 3-fold increase in the number of telcos from the initial 3 large operators comprising Singtel, Starhub and M1 which suggests a large increase in supply.

(iii) With reference to Extract 1, explain a function of price that influences consumer behaviour. [2]

- The signalling function of the price mechanism influences consumer behaviour. [1]
- The downward pressure on mobile data prices sends a positive message to consumers to consume more data for activities like "listening to music on Spotify, reading Instagram updates or watching Netflix". [1]

OR

- The incentivising function of the price mechanism influences consumer behaviour. [1]
- The falling mobile data prices provides an incentive for consumers to consume more data for activities like "listening to music on Spotify, reading Instagram updates or watching Netflix". [1]

*Note: Allocative function and rationing function are not accepted as the former is more appropriate to describe the situation where producers respond to prices to direct resources away from overcrowded markets and toward markets that are underserved and the latter is*

*more appropriate to explain how goods/services are distributed to those consumers who value them most highly in situations of shortages.*

**(iv)** From Extract 2, identify a related market to mobile data and explain how the general trend in mobile data prices in (a)(i) would affect the related market. [4]

- A related market would be the market for smartphones. [1]
- Smartphones is a complementary good of mobile data. / Smartphones are in joint demand with mobile data. [1]
  - Consuming smartphones and mobile data, which provides access to the internet, together give rise to a higher combined utility through the use of applications than smartphones were to be used on their own.
- When prices of mobile data falls as shown in (a)(i), demand for smartphones increases [1].
- As a result, equilibrium price and quantity of smartphones increases. [1]

**(b)** Using a diagram, explain the effect of the US government's action in Extract 3 on the consumer expenditure for mobile data plans. [4]

- Consumer expenditure can be calculated by multiplying the price of each mobile plan by the quantity of mobile plans purchased (i.e.  $P \times Q$ )
- The US government's action is equivalent to a removal of the price ceiling at  $P_{max}$ , evidenced by the "lifting price caps on this uncompetitive sector." [1m for correct identification of government action from the case]
- The removal of the price ceiling would allow the market to correct the shortage of  $Q_3 - Q_1$  at the initial maximum price of  $P_{max}$ .
  - Hence there will be a rise in price from  $P_{max}$  to  $P_2$  and quantity from  $Q_1$  to  $Q_2$ , resulting in a rise in overall consumer expenditure (CE) from  $0P_{max}E_1Q_1$  to  $0P_2E_2Q_2$

[2m for correct identification of initial and final CE, and a recognition of the overall increase in CE.]

[1m for correctly drawn and labelled diagram.]

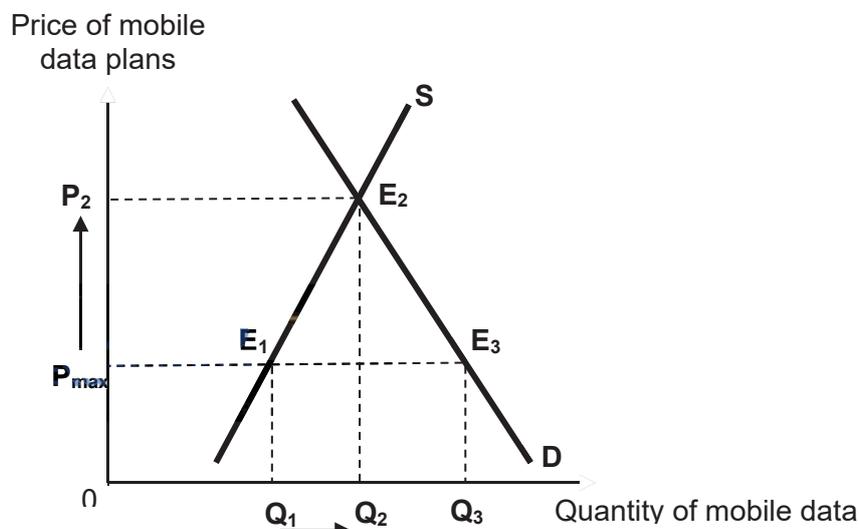


Figure 1: Market for mobile data plans

<b>(c)</b>	Suppose a US consumer is thinking of buying the ‘ <i>Sprint Unlimited Basic</i> ’ data plan.  Discuss the factors that the consumer should consider when making the above decision. <span style="float: right;">[8]</span>
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<b>Command word/phrase</b>	“Discuss”	Discussion of different factors and their relative importance
<b>Content</b>	“factors... in...decision-making”	The decision-making framework will come in useful here to help frame the answer
<b>Context</b>	“data plan”	Extract 1 and Table 2 would be useful in crafting the various benefits and costs

**Introduction:**

- In making a decision on the data plan to buy, the consumer should be taking into account his constraints, benefits and costs, while taking into account information and perspectives from different sources.

**Key argument 1: The consumer should also be considering his benefits in making the decision.**

- As seen in Table 1, should the consumer pick ‘Sprint Unlimited Basic’ data plan, he would be able to get a free video streaming service in Hulu and would derive utility from that good.
- Another benefit would be the 50MB of data, as well as the ability to get 500MB wireless access at LTE at selected hotspots. The data could be used for activities that he can derive utility from, such as “listening to music on Spotify, reading Instagram updates or watching Netflix”, as seen in Extract 1.

**Key argument 2: The consumer should also be considering his costs in making the decision.**

- First, he has to consider the upfront monetary cost of \$60 per month in signing up for the ‘Sprint Unlimited Basic’ plan.
- In addition, the consumer should also consider his opportunity cost, which is the value of the next best alternative forgone. Assuming the next best alternative is ‘T-Mobile Essentials’, the forgone benefits are the unlimited WiFi hotspot access at 3G speeds and 60GB/month from the T-Mobile plan

**Key argument 3: The consumer should be considering his constraints in making the decision. (one of the following points below would suffice, or any other logical constraint)**

- One constraint would be that of the consumer’s monthly budget for data plans. The consumer should be considering how much he is willing to set aside for his data needs. As budget needs to be set aside for other needs (e.g. such as food and housing), should the budget set aside for data be less than \$60, he would likely need to look for another data plan beyond those found in Table 2.
- Another constraint would be the amount of time he has for data usage. He has approximately 28-31 days a month to use data and therefore he should be asking

himself how much data can feasibly be used in a given month, given his usage habits.

- Another constraint would be the accessibility of the wireless hotspot points – for example, he should be considering if they are near his home/work location. This would limit the hotspot benefits of the data plans.

**Evaluative conclusion:**

- **[Stand]** In making the decision on whether to buy the ‘Sprint Unlimited Basic’ plan, the consumer should be weighing the benefits and costs.
- **[Situation]** Should the consumer be a very heavy data user, the 50GB per month would bring a lot of utility to the consumer and it is likely that the benefit would outweigh the costs
- **[Magnitude]** The most important factor is likely to be the constraints that the consumer is facing as it can influence both the benefits and costs faced by the consumer. If he has a budget constraint, this would automatically limit number of alternatives to be considered when thinking about one’s opportunity cost. If he has limited time to use data or is unable to access any nearby hotspots, the value of the benefits would be significantly reduced.

Level	Knowledge, Application/Understanding, and Analysis	Marks
L2	For a well-developed answer that <ul style="list-style-type: none"> <li>• analyses at least 2 factors that a consumer has to consider in his decision-making, and</li> <li>• actively refers to case materials in explaining the factors</li> </ul> <i>For answers that do not consider opportunity costs, cap at 4m. For answers that do not consider constraints, cap at 5m.</i>	4 – 6 (5)
L1	For an underdeveloped answer that <ul style="list-style-type: none"> <li>• has limited scope of factors considered (e.g. only 1 factor considered), and/or</li> <li>• lacks economic rigour in analysing the factors, and</li> <li>• has little or no reference to case materials</li> </ul>	1 – 3 (2)
Level	Evaluation	Marks
E	Answer provides a clear assessment of the relative importance of the factors and/or considers how the factors can influence each other.	1 – 2

**(d) (i)** Explain why public Wi-Fi is considered to be a private good. [4]

- Public Wi-Fi is considered to be a private good because it is excludable and rivalrous.
- It is excludable because while it is free in Singapore; it is feasible and not overly expensive to restrict access to only people who are willing to pay for it, for example, only providing passwords to individuals who paid for the service. [2]
- It is rivalrous because with every additional person using the public Wi-Fi, the connection speed is likely to slow for other consumers. [2]

*Note: Candidates are credited the full 2m for accurate application of each characteristic.*

(ii) Discuss whether governments should follow Singapore’s example of providing free public Wi-Fi. [12]

<b>Command word/phrase</b>	“Discuss”	This is a single policy discussion question
<b>Content</b>	“governments should follow Singapore’s example...”	In deciding whether to follow Singapore’s policy, the benefits and limitations/ unintended consequences of the policy need to be considered.
<b>Context</b>	“free public Wi-Fi”  “government”	The context is on free public Wi-Fi and therefore Extracts 4 and 5 would come in particularly useful.  There is no context given to the ‘other government’ in question – can take advantage in your evaluation!

**Introduction**

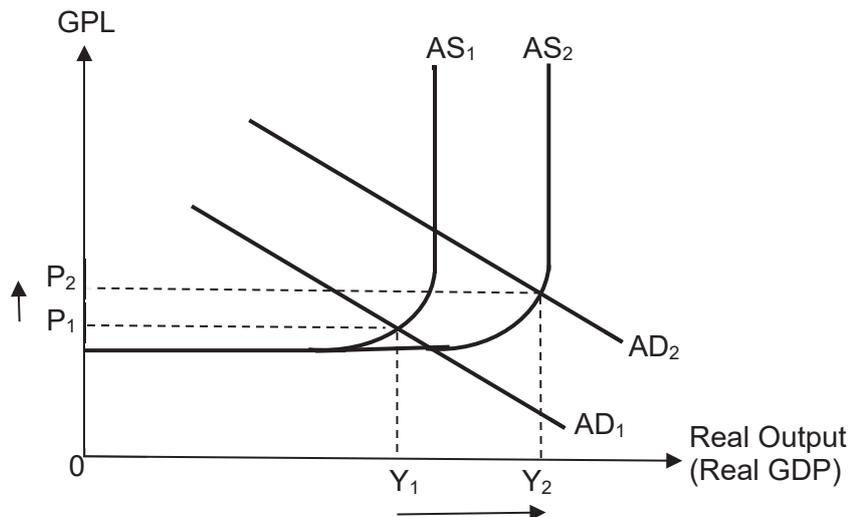
- The provision of free public Wi-Fi can be justified on both macroeconomic and microeconomic grounds, and we can consider the impact in terms of economic growth, efficiency and equity.

**Thesis – choose 1-2 out of the following three arguments:**

**Thesis 1: The promotion of free public Wi-Fi could help to generate sustained growth in the long run.**

- In the short run, the promotion of free public Wi-Fi will require a large amount of Government expenditure on infrastructure to boost connectivity around a city. It could also increase consumption as purchasing of goods become more convenient with online shopping. This, coupled with a multiplier effect where the initial increase in income would lead to further increases in induced consumption, would lead to a rise in AD.
- In the long run, the free public Wi-Fi would increase productivity and innovation among businesses. As mentioned in Extract 4, "Operators can also use Wireless@SG to offer improved services such as cashless payment and location-based analytics," which are all evidences of improved productivity.
  - As the quality of labour and entrepreneurs grow over time, this would lead to a rise in AS as well.

Fig 1: Sustained Growth in the economy



- As seen in the figure above, taken together, the increase in AD and AS would lead to an increase in income from  $Y_1$  to  $Y_2$ , with mild increases in general price levels from  $P_1$  to  $P_2$  – indicating that sustained growth has taken place.

**Thesis 2: The promotion of free public Wi-Fi could help to achieve equity in the market for data access.**

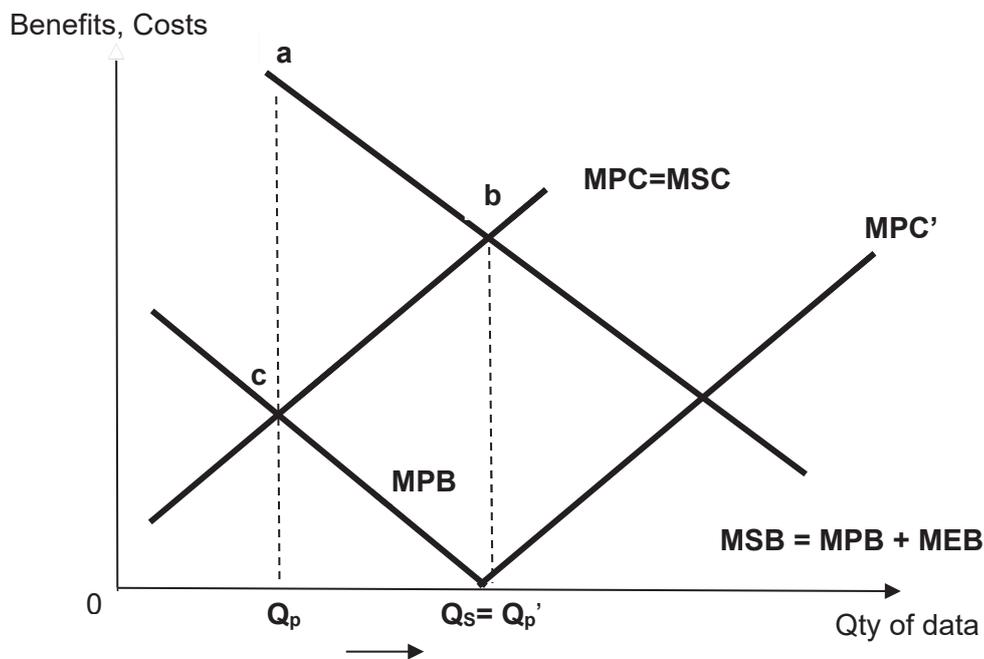
- In developed countries such as Singapore, data can be seen to be a necessity in people's everyday lives as it gives ready access to information for work or entertainment for leisure.
- If this is left to the free market, the price of data may become too expensive for low-income consumers due to the expensive mobile data plans.
- As a result, the low income may not get access to essential government services online (Extract 2 – “cannot avail a single government service today without online intervention”) if Wi-Fi is not readily available. The direct provision of free public Wi-Fi would thus help to increase equity in the market for data access.

**Thesis 3: The promotion of free public Wi-Fi could help to promote greater efficiency by correcting under-consumption due to positive externalities in consumption in the market for data.**

- **<P: Private Decision>** When deciding to consume additional data, the consumer considers only his own private benefit such as the utility of the data, and private cost such as the cost of mobile plans.
- **<E: External Benefit>** However, the use of data results in external benefits as well, such as the increased productivity of the workforce, or new ideas to spur production in other firms.
- **<T: Third Parties>** The firms who were not involved in the consumption of Wi-Fi by workers and are therefore considered third parties.

- **<D>** Due to existence of marginal external benefits (MEB), there is a divergence between Marginal Private Benefits (MPB) and Marginal Social Benefits (MSB) by the amount of MEB. Assuming no negative externalities, Marginal Social Costs (MSC) = Marginal Private Cost (MPC).
- **<Q<sub>p</sub> vs Q<sub>s</sub>>** In the free market, out of self-interest, consumers consume Q<sub>p</sub>, where MPC = MPB. However, the social optimal outcome is Q<sub>s</sub>, where MSB=MSC. Since Q<sub>p</sub><Q<sub>s</sub>, there is consumption of data.
- **<D>** Due to the underconsumption of (Q<sub>s</sub>-Q<sub>p</sub>), society loses benefits of area Q<sub>p</sub>abQ<sub>s</sub>, which is less than the cost -savings of area Q<sub>p</sub>cbQ<sub>s</sub>, resulting in a deadweight loss of the area abc. The price mechanism fails to allocate resources efficiently, the market fails and society's welfare is not maximised.
- As a result, the direct provision of Wi-Fi would cause a fall in MPC, increasing the consumption from Q<sub>p</sub> to Q<sub>p</sub>' = Q<sub>s</sub> and removing the deadweight loss, achieving allocative efficiency.

Fig 2: Positive Externalities in data consumption



**Anti-Thesis – choose 1-2 out of the following three arguments:**

**Anti-Thesis 1: Countries should not provide free public Wi-Fi as the gains in equity may not be realised**

- As argued in Extract 5, free Wi-Fi can actually just lead to increased property prices for landlords instead of truly serving the poor. (supported by Extract 5)
- This is because in areas where the free Wi-Fi is stronger, more businesses would sprout up to take advantage of the improved connectivity.
  - For example, a café would be set up in an area where the free Wi-Fi connection is strong and charge relatively expensive prices for its coffee.
  - This would result in the poor still being unable to access the free Wi-Fi because to do so, they would have to dine at the café in the first place.

**Anti-Thesis 2: Countries should not provide free public Wi-Fi as there could be a large opportunity cost involved.**

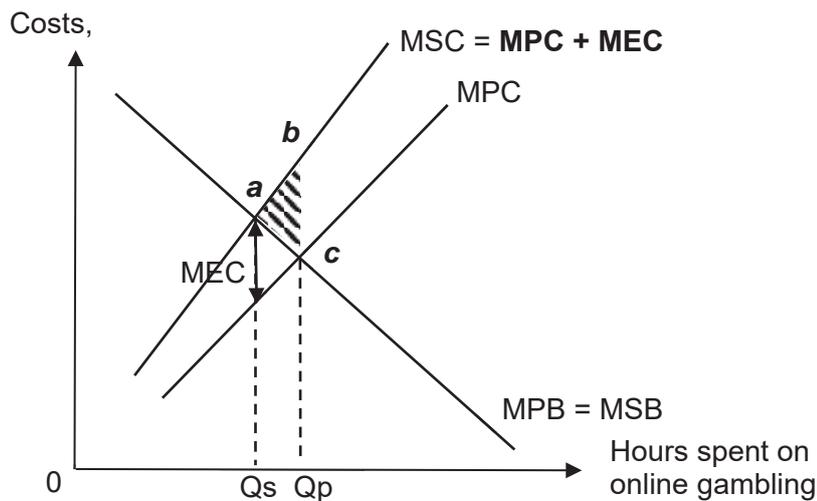
- There could be a strain on the government budget due to extensive spending on the networks required for free public Wi-Fi to be set up.
  - The opportunity cost of the spending would be any gains in allocative efficiency in merit goods such as education/ healthcare market if the government had chosen to spend the money there.

**Anti-Thesis 3: Countries should not provide free public Wi-Fi as there negative externalities in consumption of the internet.**

This is primary due to the easy access to online activities such as online gaming or online gambling

- **<P: Private Decision>** When deciding to spend an additional hour on online gambling, the consumer considers only his own private benefit such as his potential winnings and private cost such as the cost of data and the money he is gambling. Note that with free Wi-Fi, the private cost would be especially low.
- **<E: External Cost>** However, the consumption of online gambling results in external costs as well, such as the possibility of family members having to pay to fund the consumer's gambling addiction.
- **<T: Third Parties>** The family members of the online gambler are not involved directly in the consumption of online gambling and are therefore considered third parties.
- **<D>** Due to existence of marginal external costs (MEC), there is a divergence between Marginal Private Costs (MPC<sub>actual</sub>) and Marginal Social Costs (MSC) by the amount of MEC.
- **<Q<sub>p</sub> vs Q<sub>s</sub>>** In the free market, out of self-interest, consumers consume Q<sub>p</sub>, where MPC<sub>perceived</sub> = MPB. However, the social optimal outcome is Q<sub>s</sub>, where MSB=MSC. Since Q<sub>p</sub>>Q<sub>s</sub>, there is over-consumption of online gambling.
- **<D>** Due to the overconsumption of (Q<sub>p</sub>-Q<sub>s</sub>), society experiences an additional cost of area Q<sub>p</sub>b a Q<sub>s</sub>, which is more than the additional benefits of area Q<sub>p</sub>c a Q<sub>s</sub>, resulting in a deadweight loss of the area abc. The price mechanism fails to allocate resources efficiently, the market fails and society's welfare is not maximised, leading to allocative inefficiency.

Figure 3: negative externalities from online gambling



**Note: 3 key arguments (2 benefits + 1 cost or 2 costs + 1 benefit) would suffice for the maximum L marks!**

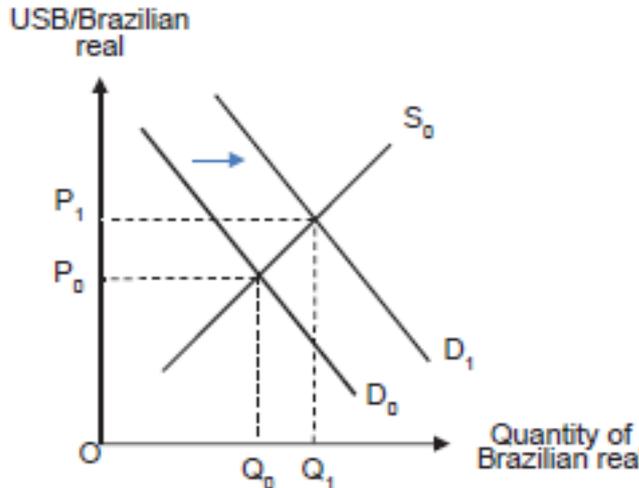
**Evaluative conclusion (a reasoned stand plus a max of 2 ATMS angles would suffice):**

- **[Stand]** The provision of free public Wi-Fi would bring about a set of benefits and costs to a city but the extent of the benefits and costs would differ based on the city in question.
  - **[Situation]** Whether a government should adopt Singapore's model of free public Wi-Fi depends on the country in question. The opportunity cost may be greater for a less-developed country as they might need to sacrifice spending in other more strategic and urgent sectors that can spur actual economic growth, such as road infrastructure.
  - **[Situation]** One reason why Singapore is able to enact free public Wi-Fi is due to our relatively small size and relative low incidence of absolute poverty. Other cities/countries may face a bigger challenge due to their larger size and the amount of ghettos/undeveloped areas that would be difficult to reach.
- **[Magnitude]** Given that there are potentially both positive and negative externalities arguments involved in the consumption of data, the efficiency argument is relatively weak in helping make a decision and government should focus more on the potential of Wi-Fi to spur growth.
- **[Alternatives]** To ensure that the benefits from free public Wi-Fi are truly realised, governments can have accompanying supply-side policies to enhance the effectiveness of free public Wi-Fi, such as courses for workers and companies on how to leverage on wireless systems to improve productivity.

Level	Knowledge, Application/Understanding, and Analysis	Marks
L3	<p>For a well-developed answer that:</p> <ul style="list-style-type: none"> <li>• is balanced by analysing the benefits of the policy and its costs/unintended consequences;</li> <li>• supports analysis with relevant economics concepts and tools of analysis; and</li> <li>• supports analysis with good use of the case material pertaining to free public Wi-Fi</li> </ul> <p>Note: Candidates will not receive full credit if analysis does not cover both macro and micro aspects.</p>	6 – 9
L2	<p>For an underdeveloped answer that:</p> <ul style="list-style-type: none"> <li>• is unbalanced, e.g. only positive or negative effects of the policy analysed; and/or</li> <li>• lacks economic rigour in the analyses of the benefits/costs of the policy; and/or</li> <li>• lacks use of the case material pertaining to free public Wi-Fi to support analysis.</li> </ul>	3 – 5
L1	For an answer that only shows a weak understanding of the micro and/or macro goals of a government.	1 – 2
E	Up to 3 marks for valid evaluative judgement on the overall effect of impact of free public Wi-Fi to governments.	1 – 3

H1 CSQ 2

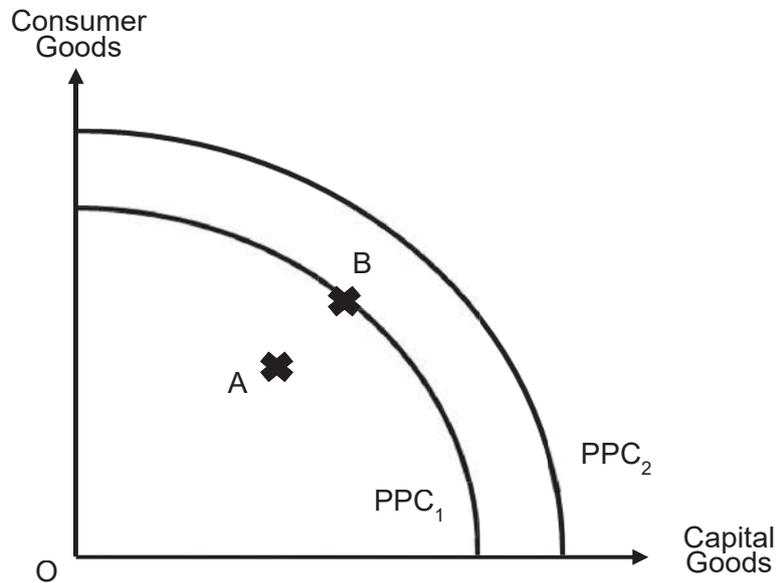
Suggested Answers

(a)	(i) With reference to Figure 1, describe the trend in Brazil's volume of exports from 2008 to 2016. [2]
<p>General trend [1]: Brazil's volume of exports generally increased from 2008 to 2016</p> <p>Refinement [1], any 1 of the following:</p> <ul style="list-style-type: none"> <li>• fluctuated during the period</li> <li>• largest fall in export volume from 2008 to 2009</li> <li>• greatest increase in 2010</li> </ul>	
	(ii) With the aid of a diagram, explain how the general trend above could have affected the external value of the Brazilian real. [3]
<p>Increase in demand for the Brazilian real [1]: As Brazil's export volume generally increased from 2008 to 2016, there will be a general increase in the demand for the Brazilian currency in the same period. This is represented by a rightward shift of the demand curve for Brazilian real from <math>D_0</math> to <math>D_1</math> in Figure 4.</p> <p>Appreciation of the Brazilian real [1]: The increase in the demand for the Brazilian currency puts an upward pressure on the external value of the Brazilian currency and results in an appreciation of the Brazilian real, represented by the increase in price of Brazilian real from <math>P_0</math> to <math>P_1</math>.</p>	
<div style="text-align: center;">  <p>The diagram shows a coordinate system with the vertical axis labeled 'USB/Brazilian real' and the horizontal axis labeled 'Quantity of Brazilian real'. The origin is marked 'O'. An upward-sloping supply curve is labeled <math>S_0</math>. Two downward-sloping demand curves are shown: <math>D_0</math> and <math>D_1</math>. A blue arrow points from <math>D_0</math> to <math>D_1</math>, indicating a rightward shift. The initial equilibrium is at the intersection of <math>S_0</math> and <math>D_0</math>, with price <math>P_0</math> and quantity <math>Q_0</math>. The new equilibrium is at the intersection of <math>S_0</math> and <math>D_1</math>, with a higher price <math>P_1</math> and a higher quantity <math>Q_1</math>. Dashed lines connect these equilibrium points to their respective values on the axes.</p> </div> <p><b>Figure 4: Market for Brazilian real</b></p>	
<p>Accurate diagram showing increase in demand for the Brazilian currency and the appreciation of the Brazilian currency. [1]</p>	

<b>(b)</b>	With reference to Extract 6, analyse how hosting the Olympics could result in market failure for the host country. [6]
<ul style="list-style-type: none"> <li>The hosting of the Olympics resulted in 20 kilometre traffic jams in the city. Visitors attending the Olympic events by car have contributed to these traffic jams. Thus, there is the problem of negative externalities being generated.</li> </ul> <p><b>Explain the private benefit and private cost (1 mark for an explanation of either the marginal private benefit or marginal private cost)</b></p> <ul style="list-style-type: none"> <li>The marginal private benefit of road usage for visitors attending the Olympic events include the increased convenience they would gain from getting to the event by car</li> <li>The marginal private cost of road usage for visitors attending the Olympics include the price of the taxi fare</li> </ul> <p><b>Explain the external cost of road usage on third parties</b></p> <ul style="list-style-type: none"> <li>The marginal external cost imposed on third parties, such as firms in the country (1 mark for identification of third parties), include a decline in productivity resulting from workers who are held up on the way to work as road users “often find journey times double or triple as a result of congestion” near Olympics venues (1 mark for explanation of external costs on third parties)</li> </ul> <p><b>Explain the market failure with reference to the over-allocation of resources and deadweight loss</b></p> <ul style="list-style-type: none"> <li>This marginal external cost results in a divergence between marginal private cost and marginal social cost (1 mark)</li> <li>The visitors who attend the Olympics only consider their private benefits and private costs, and ignored the external costs imposed on third parties.</li> <li>The private equilibrium level of road usage occurs at <math>Q_p</math> where <math>MPB = MPC</math> whereas the socially optimal level of road usage occurs at <math>Q_s</math> where <math>MSB = MSC</math>. (1 mark)</li> <li>This results in an over-utilisation of roads and causes deadweight loss as well as allocative inefficiency as social welfare is not maximised. (1 mark)</li> </ul> <p>*It is also possible for candidates to explain that there was an overproduction of the Olympic games.</p>	
<b>(c)</b>	Using Extract 7 and a production possibility curve diagram, identify and explain two benefits of hosting the Olympics to the host country. [6]
<p><b>One benefit of hosting the Olympics is actual growth [3]:</b></p> <ul style="list-style-type: none"> <li>Greater utilisation of resources [1] to meet the increase in investment and/or government expenditure as a result of hosting the Olympics [1]</li> <li>PPC to illustrate actual growth [1]: movement from Point A to Point B in Figure 1 (operating within the PPC to operating on the PPC)</li> </ul> <p><b>Another benefit of hosting the Olympics is potential growth [3]:</b></p> <ul style="list-style-type: none"> <li>Increase in investment and/or government expenditure can increase productive capacity [1], such as infrastructure projects improving the quantity and/or quality of resources available in the economy [1]</li> </ul>	

- PPC to illustrate potential growth [1]: outward shift of the PPC from  $PPC_1$  to  $PPC_2$  in Figure 1

\*Cap at 4 marks for explanations involving ONLY potential growth or ONLY actual growth.



**Figure 1: Production Possibility Curve for Brazil**

- (d) Assess how far the data provided suggest that hosting the 2020 Olympics will improve Japan's employment rate. [8]

<b>Command word/phrase</b>	Assess how far	Consider several options or arguments and weigh them up so as to come to a conclusion/judgement about their effectiveness or validity
<b>Content</b>	improve employment rate	Derived demand for labour to increase, or that labour could get jobs.
<b>Context</b>	Hosting the 2020 Olympics... Japan	Building of infrastructure (G), increased local (C) and foreign tourists (X), possibility of private sector investments (I) → increases AD.  But also note the left vacant infrastructure after olympics hosted in other cities (Nagoya, Rio etc.) + GDP per capita and productivity of Japan falling while Olympics is being organised (Fig. 2).

**Thesis: *The data suggests that hosting the 2020 Olympics can improve Japan's employment rate***

- More labour is demanded in the construction industry, a relatively labour-intensive industry, to support infrastructure projects ahead of the Olympics (Extract 8: “new stadiums, redeveloped urban areas and updated transport networks”), which results in a fall in demand-deficient unemployment
- Anticipated surge in tourist arrivals (Extract 8: “purpose-built hotels” and “tourism boost”) may lead to firms hiring more factors of production and the derived demand for labour increases, reducing demand-deficient unemployment
- After winning the bid to host the 2020 Olympics, Japan's unemployment rate has decreased (Figure 2 shows a decline in unemployment rate since July 2014), which suggests that hosting the 2020 Olympics might have contributed to improving Japan's employment rate

**Anti-thesis 1: *The data suggest that hosting the 2020 Olympics does not improve Japan's employment rate***

- While tourism-related industries anticipate a surge in tourist arrivals, past experience might have dampened business confidence (Extract 8: “But the tourism boost that organisers hoped would follow failed to materialise, and the purpose-built hotels struggled to attract guests”), hence firms might refrain from hiring new labour on a permanent basis and instead rely on technology and/or temporary workers

**Anti-thesis 2: *The data is insufficient to conclude that hosting the 2020 Olympics can improve Japan's employment rate***

- While labour is needed in the construction industry to support infrastructure projects, the data does not provide information on the extent of impact on labour employment
  - The construction industry might be driven by new building technologies and the increase in labour employment might not be significant, and/or
  - The construction industry could be reliant on foreign labour instead of the local population
- The data provided does not indicate the extent of impact on permanent employment
  - While more workers might be temporarily hired before the Olympics to build infrastructure as well as during the Olympics to cope with the surge in tourist arrivals, higher unemployment results once the projects are completed and the subsequent contraction in economic activity after the Olympics
- While Figure 2 shows a fall in unemployment rate since July 2014, the data is insufficient to conclude if this was indeed due to hosting the 2020 Olympics or other factors, since no information is given about which industries had expanded and demanded more labour in this period

**Evaluative conclusion**

- **[Stand]** The data provided suggests that Japan's employment rate might not improve from hosting the 2020 Olympics. The eventual impact depends on
- **[Situation]** The global economic situation plays a large part in determining the extent to which Japan's employment rate can improve from hosting the Olympics as that would determine the extent of tourist arrivals, for example

- **[Magnitude]** extent to which Japan’s construction industry depends on local workers for the infrastructure projects

Level	Knowledge, Application/Understanding and Analysis	Marks
L2	<p>For an answer that:</p> <ul style="list-style-type: none"> <li>• Provides a rigorous analysis of the positive and negative effects of hosting the 2020 Olympics on Japan’s employment rate</li> <li>• Is well-supported with case material</li> </ul> <p>* Cap at 5 marks for responses that DO NOT utilise unemployment data</p>	4-6
L1	<p>For an answer that:</p> <ul style="list-style-type: none"> <li>• Provides a limited analysis of the positive <u>or</u> negative effects of hosting the 2020 Olympics on Japan’s employment rate</li> <li><b>OR</b></li> <li>• Identifies the positive <u>and</u> negative effects of hosting the 2020 Olympics on Japan’s employment rate with little/no economic analysis</li> <li>• Might or might not have used the case material</li> </ul>	1-3
Level	Evaluation	Marks
E	For a well-reasoned assessment of the extent to which the data provided suggests that Japan’s employment rate will improve from hosting the 2020 Olympics.	1-2

(e)	Discuss whether the decision made by the Bank of England's Monetary Policy Committee (Extract 9) is appropriate for the UK economy. [8]	
<b>Command word/phrase</b>	Discuss...  Decision... Appropriate...	Present key points for both sides of the argument (for and against) in detail and come to a conclusion. There should be some evidence of balance, though not necessarily of equal weighting.  The appropriateness of an action would require an analysis of the context in which it is being implemented in order to determine how the decision would interact with other factors in order to determine the overall impact.
<b>Content</b>	decision made by the Bank of England's Monetary Policy Committee (Extract 9)...	According to extract 9, England's Monetary Policy Committee has decided to raise interest rates. This is a contractionary (interest rate) monetary policy.
<b>Context</b>	UK economy	The UK economy is currently facing: <ul style="list-style-type: none"> <li>• Depreciation of the pound → inflation</li> <li>• Stagnant wage growth</li> <li>• Poor consumer confidence and retail sales</li> <li>• Stalled growth</li> </ul> <p>The UK economy is also expected to grow <b>IF</b> England plays well in the <b>upcoming</b> World Cup</p>

**Introduction**

- The Bank of England's Monetary Policy Committee opted to raise interest rate (Extract 9)
- Context: the UK economy was recovering from a time where "the wider economy stuttered and growth stalled" (Extract 9)

**Thesis: *The decision to raise interest rate can benefit the UK economy***

- Reduce demand-pull inflation: Higher interest rate increased the cost of borrowing, resulting in fall in consumption expenditure and investment expenditure, which leads to a fall in AD and reduces any demand-pull inflationary pressures that the recovering UK economy might be experiencing
- Reduce cost-push inflation: Higher interest rate could make the interest rates in the UK relatively higher than in other countries, resulting in greater hot money inflows and an appreciation of the UK pound as the demand for the UK pound increased. Appreciation helps to reduce imported inflation (Extract 9: "The pound dropped sharply, pushing inflation up." implies appreciation of the pound can reduce inflation)

**Anti-thesis: *The decision to raise interest rate might have a negative impact on the UK economy***

- Recovery in the UK is potentially temporary (Extract 9: “when England play well in the World Cup, England supporters are happier and are more inclined to spend on non-essential items”)
  - In this case, consumption expenditure is a significant component of the UK’s AD (Extract 9: “Britain is generally a consumer powered economy, so when people are buying, growth accelerates.”) and the increase in interest rate was likely to have a significant contractionary impact after the world cup
- The fall in AD could hamper the economy’s recovery and cause it to slip back into slow/negative growth and raise demand-deficient unemployment

**Evaluative conclusion**

- **[Stand]** Whether the decision to raise interest rate by the Bank of England’s Monetary Policy Committee is appropriate depends on the state of the UK economy.
- **[Situation + Magnitude]** Should the UK economy be operating near/at its productive capacity, the benefits of the Committee’s decision to raise interest rate (i.e. reduce inflationary pressures) would likely outweigh the costs of doing so (i.e. slow/negative growth and higher demand-deficient unemployment), and hence the decision would be appropriate.
- **[Situation + Time frame]** Given the broader economic context of Britain’s exit from the European Union (“Brexit”), however, the UK economy’s long-term economic outlook is likely to be pessimistic and the optimism that followed sporting excellence at the World Cup could be short-lived. As such, the decision to raise interest rate might not be appropriate as it could cause the economy to slip back into a period of weak/negative economic growth, higher demand-deficient unemployment and possibly deflation.

Level	Knowledge, Application/Understanding and Analysis	Marks
L2	For an answer that: <ul style="list-style-type: none"> <li>• Provides a rigorous analysis of the positive and negative effects of higher interest rate on the UK economy</li> <li>• Is well-supported with case material</li> </ul>	4-6
L1	For an answer that: <ul style="list-style-type: none"> <li>• Provides a limited analysis of the positive <u>or</u> negative effects of higher interest rate on the UK economy</li> <li><b>OR</b></li> <li>• Identifies of the positive <u>and</u> negative effects of higher interest rate on the UK economy with little/no economic analysis</li> <li>• <b>Might or might not have used</b> the case material</li> </ul>	1-3
Level	Evaluation	Marks
E	For a <b>well-reasoned assessment</b> of the extent to the decision to raise interest rate is appropriate for the UK economy.	1-2

<b>(f)</b>	Using the information provided and/or your own knowledge, evaluate whether, on balance, a government should prioritise the pursuit of high rates of economic growth to raise the standard of living of its citizens. <span style="float: right;">[12]</span>
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<b>Command</b>	“evaluate”	Provide a balanced argument and a judgement at the end
<b>Content</b>	“prioritise the pursuit of high rates of economic growth”  “standard of living”	Need to consider actual growth. The term “prioritise” also hints at the need to consider other macroeconomic goals.  Material and non-material standard of living
<b>Context</b>	“Using the information provided and/or your own knowledge”	Examples can be from the case materials or from elsewhere

**Introduction**

- Define standard of living; consider material and non-material aspects
- State the macroeconomic aims of the government: sustained economic growth, price stability, full employment
- High rates of economic growth here refers to actual growth i.e high rates of increase in the real national output of an economy

**Development 1: High rates of economic growth can raise standard of living**

- Increase material SOL: higher real national income will result in higher real GDP per capita and households having higher incomes and purchasing power. This allows them to enjoy more goods and services. Thus, material SOL increases. For example, Brazil’s hope is that hosting the Olympic Games would result in additional stimulus for its economy via an increase in G and AD, resulting in higher incomes for its population and greater material SOL.
- Increase non-material SOL: higher real national income results in higher tax revenue for the government and increases its ability to spend on areas that improve non-material SOL, like education and healthcare. Increased government spending on education can result in increased literacy rates whereas raised spending on healthcare can possibly extend the life expectancy of the population. Also, the building of transport infrastructure can help to increase the convenience of people who travel about for work or leisure. For example, extract 7 mentioned that Rio built many transport infrastructure projects throughout the city.

**Development 2: High rates of economic growth might not improve standard of living**

- Material SOL might not improve for all citizens. This is because there could be the case of **structural unemployment** with high rates of economic growth. Structural unemployment is a case where there is a mismatch between the skills that unemployed workers possess and the skills that the job vacancies require. As sunrise industries expand, there would also be sunset industries that are declining and firms in these sunset industries might retrench their workers. If these workers do not have the right skill sets that the current job vacancies require, there would be

a rise in structural unemployment. Therefore, the high rates of economic growth might only increase the material SOL of households employed in expanding industries but might worsen the material SOL of those who have become structurally unemployed.

- Worsen non-material SOL: higher levels of national output could result in greater environmental pollution, especially if the expanding industries use methods that generate pollution (Extract 7: “partially built on a protected nature reserve”; Extract 8; “damage to the natural environment”) and/or the firms fail to properly treat industrial waste before discharging them into the environment. Higher pollution levels may worsen the health of people in the country, thereby reducing their life expectancies.

### **Development 3: Price stability and full employment (i.e. the other macro aims can also improve standard of living)**

- Price stability can also have a positive impact on the material SOL of the country. Price stability prevents the erosion of the real value of money and helps to ensure that the purchasing power of households is maintained, thus having a positive impact on the material SOL.
- Full employment can improve standard of living too as it ensures that the benefits of high rates of economic growth are shared across more sectors/households in the country. With more people being employed, purchasing power of these consumers would rise and they would be able to buy more goods and services, thus raising the material SOL of the country. Furthermore, there would be a fall in the crime rates as the opportunity costs of committing crimes would increase, making the country a safer place to live in and improving the non-material SOL.

### **Evaluative Conclusion**

- **[Stand]** Whether a government should prioritise the pursuit of high rates of economic growth to raise the standard of living of its citizens depends on the economic conditions of the country.
- **[Situation]** In countries that are operating below its productive capacity, the government can consider pursuing high rates of economic growth to raise the standard of living of its citizens. However, countries that are operating near full employment might want to prioritise other macroeconomic aims such as price stability, to ensure that the benefits of the high rates of economic growth on standard of living can be sustained
- **[Situation]** It also depends on the stage of the development of the country. If the country is a less developed one like Cambodia, the high levels of poverty there would necessitate a higher focus on economic growth rates to lift the population out of poverty and improve their material standard of living. On the other hand, if the country is a more developed one like Japan, poverty levels are much lower and most people have their basic needs fulfilled. In such a situation, the focus could then be on improving their non-material standard of living. For example, the government could increase spending on healthcare and raise its efforts to reduce pollution levels, therefore increasing life expectancy.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For an answer that: <ul style="list-style-type: none"> <li>• Provides a rigorous analysis of the positive and negative effects of prioritising high rates of economic growth on standard of living, and how prioritising other macroeconomic aims can raise standard of living</li> </ul>	6-9
L2	For an answer that: <ul style="list-style-type: none"> <li>• Provides a limited analysis of the positive <u>or</u> negative effects of prioritising high rates of economic growth on standard of living, <u>and/or</u> how prioritising other macroeconomic aims can raise standard of living</li> <li style="text-align: center;"><b>OR</b></li> <li>• Identifies the impact of achieving macroeconomic aims on standard of living with little/no economic analysis</li> </ul>	3-5
L1	For a largely irrelevant <b>OR</b> highly descriptive <b>OR</b> conceptually erroneous response	1-2
Level	Evaluation	Marks
E	For a well-reasoned assessment of whether a government should prioritise high rates of economic growth to improve standard of living for its citizens.	1-3





**VICTORIA JUNIOR COLLEGE  
PRELIMINARY EXAMINATIONS 2019**

**H1 ECONOMICS  
8823/01**

**19 September 2019  
3 hours**

Additional Materials: Answer Booklet(s)

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**READ THESE INSTRUCTIONS FIRST**

Write your name and class on every answer booklet that you hand in.  
Write in dark blue or black pen.  
You may use an HB pencil for any diagrams, graphs or rough working.  
Do not use staples, paper clips or correction fluid.  
Do not write in the margins.

There are 2 questions in this paper. You are to answer **all** questions. Divide your time accordingly between the 2 questions.

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

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## Question 1: Challenges in Italy and Japan

**Table 1: Selected macroeconomic indicators of Italy**

	2014	2015	2016	2017
<b>Real GDP Growth (annual %)</b>	0.1	0.9	1.1	0.9
<b>Consumer Prices (annual %)</b>	0.24	0.06	-0.09	1.23
<b>Unemployment (% of total labour force)</b>	12.5	13.1	11.5	11
<b>Nominal Interest Rate (%)</b>	0.05	0.05	0.0	0.0
<b>Public Debt (% of GDP)</b>	131.5	131.3	131.1	131.3

Source: World Bank

**Table 2: Selected macroeconomic indicators of Japan**

	2014	2015	2016	2017
<b>Real GDP Growth (annual %)</b>	0.4	1.2	0.6	1.9
<b>Consumer Prices (annual %)</b>	2.76	0.79	-0.12	0.47
<b>Unemployment (% of total labour force)</b>	3.6	3.5	3.2	2.8
<b>Nominal Interest Rate (%)</b>	0.0	0.0	-0.1	-0.1
<b>Public Debt (% of GDP)</b>	249.1	248	250.8	253

Source: World Bank

### Extract 1: Why Italy's economy is stagnating

Why is Italy's economy so sickly and has the country's new government found the cure for its economic ills? The experts' answers, ranging from corporate culture to public debt, provide little backing for the Italian government's case. It has plans to increase the fiscal deficit up to 2.4 per cent of gross domestic product that will kick-start growth after years of poor performance. While the initial slowdown was largely due to less dynamic world trade caused by the lingering trade tensions globally and an economic slowdown in China, the recent slackening of economic activity is more attributable to sluggish domestic demand, particularly investment.

The challenge facing the Italian government is to get Italy out of the slow or no-growth trap it has been caught in throughout this century. Growth has stalled, leaving the country's economic output still 5 per cent below its pre-crisis peak of 2008 and most recent growth figures showed that Italy's real GDP contracted 0.1 percent in Q3 of 2018. Those who opposed to increasing power of the European Union some of whom are close to Italy's populist coalition government, often blame the single currency for the economy's ills, arguing being a member of the Eurozone has made it lose control of domestic monetary policy tools. But the broad consensus among economists is that the country's problems are due to structural weaknesses, rather than the euro.

Italy's coalition government argues that its spending plans will help fuel growth. But many of the experts consulted argue the contrary that high government debt levels have caused

consumer and business confidence level to drop drastically. The country is also still obliged to severely reduce its budget deficit and public debt to respect the European Union (EU) guidelines.

Poor long-term growth usually stems from poor economic fundamentals. And Italy's fundamentals are notoriously bad. It's difficult to pin down a single salient shortcoming, but its low productivity is a good place to start. Italy's productivity gains have been abysmal. Reaching back to the 1990s, Italian employees have been clocking longer hours while producing less. Italy also suffers from excessive regulation and a dearth of R&D spending.

Adapted from Financial Times, Nov 2018

### **Extract 2: Negative interest rates in the EU**

Negative interest rates rarely occur and usually only when a country's central bankers are forced to utilise the monetary policy tool where the interest rates are set below zero during harsh economic times. The European Central Bank has just confirmed that the prevailing negative interest rates will remain in place at least for the rest of this year, and potentially much longer. While encouraging lending in theory, negative interest squeeze bank profits margins, making them less willing to extend loans. It's true that keeping rates too low for too long could be counterproductive. Banks also believe that their customers would terminate those deposits and hold cash instead if they introduced negative rates. Lesser deposits would just mean less money for banks to lend out for investment purposes.

Source: Bloomberg, March 2019

### **Extract 3: The Japanese economy - is Abenomics working?**

Japan had a relatively good year in 2016 and the momentum continues into 2017. However, underlying domestic private consumption and investment remain moderate, and inflation remains stubbornly low. The Bank of Japan admitted that raising inflation to the 2 percent policy target was taking much longer than expected. Having an inflation rate that is too low for a prolonged period causes the economy to lose its momentum and one overarching concern is that households and businesses will expect even lower inflation in the future, causing them to hold back their spending.

Let us step back and revisit the much-hyped "three arrows" of Abenomics. Abenomics refers to the economic policies advocated by Prime Minister Abe to boost growth. We have seen some degree of success with the first and second arrows, namely, bold monetary easing and fiscal stimulus. In contrast, the third arrow, structural reforms, has so far missed the target by a big margin. Structural reform is undoubtedly the most critical component of Abenomics. One of the key structural reforms included the labour market reforms, which if implemented fully, can trigger a landscape change in the labour market. The benefits are obvious and it does have an effect on boosting long-term growth and living standards if labour productivity can be raised. By relaxing labour regulations, it can also create a higher level of mobility in the job market. In essence, structural change of the labour market which includes loosening labour rules, making laying off of workers easier and relaxing immigration rules is a powerful medicine to heal a stagnant economy plagued by low labour productivity. This medicine, however, can taste extremely bitter for some people. Concern persists that adding more foreign blue collared workers especially in sectors such as construction, farming and nursing will lower wage level for the lower skilled Japanese workers in the country. It is conceivable that the unemployment rate as well as the bankruptcy rate may spike, at least temporarily.

Source: IMF.org, July 2017

#### Extract 4: Exchange Rate Stance

The central problem is that Japan's economic growth relies largely on a weak yen and its capacity to boost exports. A weak yen enhances the price competitiveness of Japan's export sector by making yen-denominated products cheaper for overseas buyers. It also exercises an inflationary influence on the prices of foreign goods imported into Japan, thus helping the Bank of Japan's (BOJ) pursuit of higher inflation.

In Singapore, the Monetary Authority of Singapore (MAS) has instead tightened its monetary policy despite advance official showing that Singapore's economic growth slowed to 2.6 per cent year-on-year in the third quarter. The central bank slightly increased the slope of the policy band from zero per cent to allow for "modest and gradual" appreciation, – marking its first tightening move in six years. In the quarters ahead, MAS said, imported inflation is likely to increase on account of higher global oil and food prices.

*Source: Adapted by scmp.com, Jan 2018 and channelnewsasia.com, Oct 2018*

#### Questions

- (a) (i) Explain the link between economic growth and public debt. [3]
- (ii) In the case of Italy, does the data in Table 1 support the above relationship? [2]
- (b) (i) Using Table 1, explain why real interest rate has been mostly negative in Italy. [2]
- (ii) Explain **two** possible macroeconomic consequences of maintaining negative real interest rates in the economies of the Eurozone countries. [4]
- (c) (i) Explain the causes of Italy's stagnating actual and potential economic growth. [6]
- (ii) With reference to Extract 1, discuss the appropriateness of policies that Italy can adopt to achieve economic growth. [12]
- (d) In Extract 3, structural reforms are said to be a "powerful medicine to heal a stagnant economy... yet this medicine, however, can taste extremely bitter for some people".
- Explain the positive and negative impact of structural reforms on the standard of living in Japan and comment on its overall impact on Japan's standard of living. [7]
- (e) With reference to the data and/or your own knowledge, explain and comment on the different stances that Bank of Japan (BOJ) and Monetary Authority of Singapore (MAS) have taken towards the exchange rate of their countries' currencies. [9]

[45 marks]

## Question 2: The Market for Sugar

**Table 3: World production and consumption of sugar, 2014 – 2017**

	Production (in million metric tons)	Consumption (in million metric tons)	Average price for sugar worldwide (nominal USD per kg)
2014	181.3	176	0.37
2015	180.7	178.7	0.3
2016	174.7	180	0.4
2017	178	181	n/a

Source: Statista, 2019

### **Extract 5: The War on Sugar's Biggest Casualty: Global Prices**

Sugar prices are hovering near a three-year low as food companies around the world reduce sugar in their products and move toward alternative sweeteners amid health concerns including diabetes, obesity and heart disease.

The problem with demand is due to shifting consumer tastes. Consumers are leaving sugary beverages behind in favour of unsweetened iced teas and flavoured seltzer waters. That has major beverage companies shifting priorities. In Spain, PepsiCo said it has brought down the amount of sugar in its products by 29 percent compared with 2006 and is working toward the goal of two-thirds of its soft drinks containing fewer than 100 calories.

While this heralds a shift in demand for sugar, supply of the commodity is increasing. In its monthly update for July, the International Sugar Organisation says a record sugar surplus expected this year, followed by a surplus next year, means excessive stocks of sugar will take time to liquidate. And producers aren't cutting back. Sugarcane farmers in India are expanding their plantations following subsidies to boost sugar exports that are encouraging production. That is despite the fact that the country, the world's second-largest producer behind Brazil, has produced 6.5 million tons more sugar than it uses over the year that ends Sept. 30.

Source: The Wall Street Journal, Aug 2018

### **Extract 6: Rise in minimum price for sugar in India**

India, which vies with Brazil as the top sugar producer, increased the minimum selling price of sugar by 6.9 percent to help sugar mills. The selling price for millers was raised to 31 rupees (44 cents) per kilogram from 29 rupees at present, according to a government notification on 14 February 2019. The benchmark price is effective immediately.

A rise in the state-controlled price may prompt millers to sell more locally. The government spending has been rising with the increase in sugar stockpiles in India, where production is set to exceed local demand for a second year.

Source: Bloomberg, Feb 2019

### **Extract 7: Uncertain effects of sugar rush on consumers**

Analysts say the increased supply of sugar - not just from the UK, but from other major EU producers - should ultimately lead to lower prices in future. However, the effect on sugary products, like cola and sponge cake, will be more muted, because the cost of sugar only makes up a small part of the overall price of those goods

Sugary products, for example soft drinks, cakes and pastries, are dubbed as the main causes of why children in England are consuming twice as much sugar as recommended. The excess sugars consumed by children increase their risk of childhood obesity. Ignorant of the harmful effects of obesity on themselves, children continue to consume unnecessary amount of sugars.

Consumption of such sugary products may also have led to harmful effects on society. These include the strain on healthcare services from obesity-related diseases, such as diabetes, as well as reductions in labour productivity and rising sickness absenteeism for firms. This worrying trend has prompted the UK government to impose a sugar tax on soft drinks earlier in April 2018. Officially called the Soft Drinks Industry Levy (SDIL), the tax puts a charge of 24 pence on drinks containing 8g of sugar per 100ml and 18 pence a litre on those with 5-8g of sugar per 100ml, directly payable by manufacturers to HM Revenue and Customs (HMRC). As part of the Government's childhood obesity strategy, it aims to reduce sugar consumption by persuading companies to reformulate their high sugar brands and avoid paying the levy.

In addition, a host of measures including restrictions on the advertising of junk food to children, action on price promotions on unhealthy products and clearer food labelling will help parents to make healthy choices and ensure their children have the healthiest possible start in life

Source: BBC News and London School of Hygiene and Tropical Medicine, June 2018

### **Extract 8: Sugar and Britain's obesity crisis**

The effectiveness of the sugar tax to reduce sugar consumption remains questionable. Food manufacturers and supermarkets have only managed to cut 2% of sugar content. Meanwhile the obesity figures continue to rise relentlessly.

Some also worry that the increase in the price of high-sugar drinks due to a sugar tax could lead to an increase in the purchase of beer, diet drinks and juice. Researchers find that alcohol and alternative drink options could act as substitutes.

Funds raised from the sugar tax are earmarked for spending on school sports programmes and breakfast clubs, as part of wider efforts to combat childhood obesity. The initial forecast was that the tax would bring in £520 million in its first year of operation, but this was revised down to £275 million as a result of company efforts to remove sugar from their products. Data from the first full year of the tax is not yet available, but receipts from April to October 2018 totalled £154 million.

Dr Laura Cornelsen, assistant professor in public health economics and MRC Career Development Fellow at the London School of Hygiene & Tropical Medicine, says this highlights that changing behaviour is really difficult, particularly when people who have been used to the same product for years say they really like it. She adds, "Changing behaviour is really difficult and strong preferences and habits mean the price responsiveness is likely to be lower."

The levy on sugary drinks is not a silver bullet to fix unhealthy diets. While it is a step in the right direction, more is likely needed to be done.

Source: Guardian, Oct 2015 and London School of Hygiene and Tropical Medicine, June 2018 and Rathbone Greenbank Investments, Apr 2019

## Questions

- (a) Using Table 3, account for the change in average prices for sugar worldwide from 2014 to 2016. [3]
- (b) Using Extract 5, explain the falling trend of global sugar prices. [6]
- (c) (i) With the help of a diagram, explain why 'government spending has been rising with the increase in sugar stockpiles in India' (Extract 6). [3]
- (ii) Using the concept of price elasticity of demand, explain how the rise in the minimum price will affect consumer expenditure on sugar in India and comment on whether you believe such an impact is certain. [6]
- (d) (i) With reference to Extract 7, assess **two** reasons why the British government would like to intervene in the market for soft drinks. [9]
- (ii) Explain **two** possible factors that the UK government should consider in deciding whether to impose a ban on sugary drinks. [6]
- (iii) With reference to Extracts 7 and 8, evaluate the effectiveness of policies used by the UK government to address the problem of sugar overconsumption. [12]

[45 marks]

- End of paper -

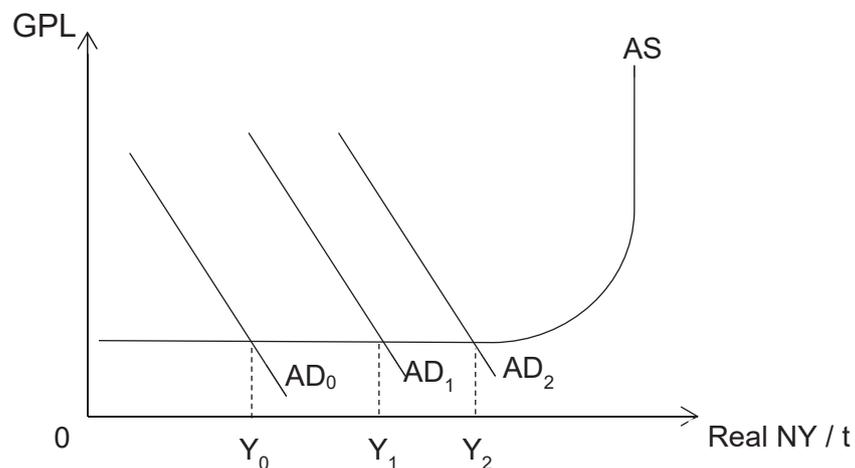


## Suggested Answers to Question 1

<b>(a)</b>	<b>(i)</b> Explain the link between economic growth and public debt.	[3]
	There is an <u>inverse relationship</u> between economic growth and public debt.[1] As the country experienced an increase in economic growth, it can be expected that tax revenue will increase due to a wider tax base [2] while expenditure on unemployment benefits will fall, thus reducing the budget deficit and in turn the public debt levels. [2] Note: Can accept that greater government spending will worsen debt levels as more government spending is needed as a fiscal stimulus during negative growth.	
	<b>(ii)</b> In the case of Italy, does the data in Table 1 support the above relationship?	[2]
	From 2014 to 2016, as economic growth improved, the public debt as a percentage of GDP decreased. [1] From 2016 to 2017 there is still positive growth yet the public debt as a percentage of GDP increased. [1] Overall, the relationship is not demonstrated consistently.	
<b>(b)</b>	<b>(i)</b> Using Table 1, explain why real interest rate has been mostly negative in Italy.	[2]
	Real interest rate is nominal interest rate, adjusted for inflation. [1] From 2014 to 2017, except 2016, the inflation rate (as measured by annual % change in consumer prices) was higher than the nominal interest rate, seen in Table 1 [1] Therefore, Italy had seen negative real interest rate during this period in Table 1.	
	<b>(ii)</b> Explain two possible macroeconomic consequences of maintaining negative real interest rates on the economies of the Eurozone countries.	[4]
	<p>With negative interest rate, it would mean savings are discouraged since there is less return on their savings and with less bank deposits, this would lead to less funds available in banks to lend out for investment purposes. As stated in the extract, with negative interest rate, this will also squeeze bank profits margins, making them less willing to extend loans. Overall, this could reduce investment levels thus affecting potential growth in the long run. [2]</p> <p>Not only that, savers incur a cost for savings so this reduces their future income levels thus affecting future material standard of living for the country. [2]</p> <p>If negative interest rate is maintained in the long run and once the country is out of recession, this can lead to high levels of consumption and investment, leading to demand pull inflation if the economy is close to full employment. [2]</p> <p>Any 2 of the above.</p>	
<b>(c)</b>	<b>(i)</b> Explain the causes of Italy's stagnating actual and potential growth.	[6]
	<p>Evidence: Global Trade tensions and economic slowdown in China</p> <p>Extract 1 suggested that Italy's stagnant growth was initially caused by the global trade tensions and an economic slowdown in China, who being one of the world's largest economies is likely to be a major trading partner of Italy. Economic</p>	

	<p>slowdown in China will mean a slower growth in national income and purchasing power. This will dampen the demand for goods and services, including imports from Italy, thus dampening Italy's export revenue. Global trade tensions will also result in a reduction in trade activity, hence (X-M) may rise slower.</p> <p>Global trade tensions may also result in greater uncertainty causing a slowdown in investment expenditure (I). Moreover, as inferred in Extract 1, in recent times, stagnant growth is caused by "sluggish domestic demand, particularly investment"</p> <p>Overall, the slower increase in I and (X-M) will result in slower increase in Italy's AD and national income via multiplier effect. This could have resulted in a slowdown in Italy's actual economic growth. [3m]</p> <p>[Note: students can also explain as a fall in AD since there is a contraction of real GDP in Q3 of 2018.]</p> <p>Evidence: Structural Weakness</p> <p>In addition, there is structural weakness in Italy's economy such as low productivity, poorly developed capital markets, excessive regulation and a dearth of R&amp;D spending as indicated in Extract 1. These will affect long-term growth. The implication in the long run is a decrease in capital accumulation, dampening the productive capacity, leading to a slower increase in AS. Vertical portion of the AS shifts to the right by a smaller extent, slowing down potential growth. Moreover, the lack of R&amp;D spending will also slow down any potential improvement in the quality of capital, and cause a slower rise in AS. The effects are also similar to the above explanation. [3m]</p> <p>*Low productivity (less output per man-hour) could also affect cost of production and cause a slower rise in the horizontal portion of AS, affecting actual growth. Excessive regulation (which may give rise to inefficient and bureaucratic administrative processes) may discourage investment in Italy. This may also contribute to the slower increase in AD. Note: This explanation can be credited for actual growth.</p> <p>Note: students can also explain as a fall in potential growth.</p>	
	<p>(ii) With reference to Extract 1, discuss the appropriateness of policies that Italy can adopt to achieve economic growth.</p>	[12]
	<p>Introduction: Given the stagnant growth rate in Italy, high unemployment rate is likely due to the weak consumer and business confidence in Italy, government borrowing may increase as a fiscal policy stance in order to stimulate growth via aggregate demand. However, there is high level of public debt (131% of GDP) in Italy and the main concern is the sustainability of debt level. Italy may otherwise consider cutting back on public debt to instill confidence level or resort to having EU agree on a devaluation of Euro currency. Appropriateness of policies would be to look at its effectiveness, causes, constraints of high debt and unintended consequences.</p> <p><b>Expansionary fiscal policy is one policy that Italy can adopt to address the sluggish domestic demand.</b></p>	

A government can increase expenditure (G rises) by building infrastructure such as roads or expansion of the railway lines, resulting in a rise in demand for goods and services. It can also cut direct taxes (T). Lower income tax means that households will have higher disposable income. With the increase in purchasing power, households are more likely to spend on consumer goods/services to satisfy their wants. Lower corporate tax (which increases expected after tax profit) will increase the post-tax expected rate of returns of investment for firms. With higher expected returns on investment, firms are likely to demand more capital goods (e.g. machinery), leading to an increase in investment expenditure. With the rise in G, C and I, AD rises. With AD exceeding AS at the current general price level, there will be an unplanned fall in inventories. This will lead to firms increasing production and hiring more factors of production, such as labour. As a result, households' income will increase and this increase in purchasing power will induce higher consumption of other domestic goods and services, causing a subsequent rise in AD. National income will be higher as output increases further. The multiplier process would eventually lead to a multiplied increase in real GDP to  $Y_2$ . This results in actual economic growth.



[Ev] However, this policy will worsen Italy's public debt and budget deficit problems. Public debt is high at about 131% of GDP. Having high debt levels may be unsustainable in the long run as the government may not be able to pay back their debts. It could cause a further strain on the budget due to the need to service their debts in the future. Therefore this may limit the government's spending in the future, and impede future economic growth. Furthermore, in this context of Italy, reducing taxes may be ineffective if consumers and firms are unwilling to spend and invest as increasing levels of debt may reduce business and consumer confidence and could in fact lead to a fall in I and C thus AD.

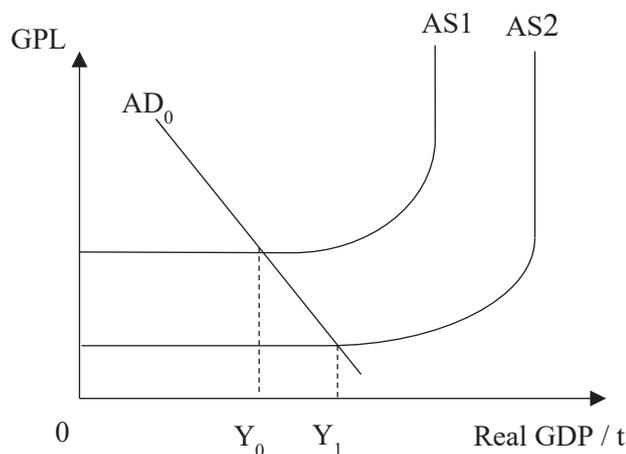
**In light of the high government debt, cutting government spending and increasing taxes, may also be an appropriate policy to reduce its debt level and improve business and consumer confidence.**

By reducing public debt levels in Italy, this may start to improve business and consumer sentiments which will increase C and I and increase AD and thus national income via multiplier, bringing about actual growth

[Ev] However, this measure will have a contractionary effect on Italy's economy and will result in negative growth in the short run.

**Supply side policies may be more appropriate to achieve economic growth.**

Extract 1 mentioned that the long term stagnant growth stems from low productivity gains. Given that Italy also suffered from excessive regulation and a dearth of R&D spending, the government can provide grants and subsidies to encourage R&D, which could lead to product and process innovation. The government can also provide grants for skills upgrading or build infrastructure to develop R&D capabilities. The increase in labour productivity and quantity /quality of capital will increase productive capacity. Moreover, improved labour productivity (assuming no change in wages) and process innovation which leads to lower cost methods of production will also reduce unit cost of production. As such, AS will increase and both the horizontal and vertical portions of AS shift to the right. There will be a corresponding rise in national income, bringing about actual growth. Potential growth also results from the rise in potential output.



In the longer run, this policy may also help to attract investors into the country by boosting the confidence in the economy as labour productivity improves as well as increase export revenue in Italy especially if quality of exports increases or there is a rise in export price competitiveness.

[Ev] However, the odds against Italy is to whether the country is able to get more funding and to incentivize retraining and upgrading of skills among the workers. Workers may be resistant towards training. Beyond this limitation, supply side policies may be largely appropriate as it solves the root problem as mentioned which is structural issues and low productivity. Therefore, despite the higher spending in the short run and worsening the debt levels, this can help to generate higher economic growth in the future which can be used to repay Italy's debt.

**Conclusion**

In spite of Italy's high debt level, having to cut back on government spending and increase in taxes would likely hinder growth. It is seen more like an obligation to cut its public debt as being part of Eurozone. It would be more appropriate for Italy to implement expansionary fiscal policy together with supply side policies to

	<p>achieve economic growth as growth will help to reduce public debt in the long run. This is also in light of increasing employment level in Italy.</p> <p>Therefore in the case of Italy, the most appropriate measure is depends on whether it is able to target most of the root causes of the ailing economy. In this case, supply-side policies are needed to address the root causes of low productivity and poor economic fundamentals. At the same time, the Italian government has to deal with the conflicts of interest between its government and the Euro zone. With a common currency in use, Italy has lost control of its monetary policy tools. Threading a careful path between euro zone rules and domestic-economy support, perhaps Italy has to implement expansionary measures, while adding new incentives for innovative investments.</p> <table border="1"> <thead> <tr> <th>Level</th> <th>Descriptor</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>L3</td> <td>Rigorous analysis with elaboration of at least 2 policies that can achieve economic growth. Best answers provide points that are backed by case evidence.</td> <td>6-9</td> </tr> <tr> <td>L2</td> <td>Descriptive answer with little or no reference to case extract. Insufficient points and elaboration for relevant policies.</td> <td>3-5</td> </tr> <tr> <td>L1</td> <td>Descriptive answer with little or no reference to case extract. Mere listing of points. Answer is not directly relevant to question.</td> <td>1-2</td> </tr> <tr> <td>E</td> <td>Stand with relevant substantiation</td> <td>1-3</td> </tr> </tbody> </table>	Level	Descriptor	Marks	L3	Rigorous analysis with elaboration of at least 2 policies that can achieve economic growth. Best answers provide points that are backed by case evidence.	6-9	L2	Descriptive answer with little or no reference to case extract. Insufficient points and elaboration for relevant policies.	3-5	L1	Descriptive answer with little or no reference to case extract. Mere listing of points. Answer is not directly relevant to question.	1-2	E	Stand with relevant substantiation	1-3	
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L3	Rigorous analysis with elaboration of at least 2 policies that can achieve economic growth. Best answers provide points that are backed by case evidence.	6-9															
L2	Descriptive answer with little or no reference to case extract. Insufficient points and elaboration for relevant policies.	3-5															
L1	Descriptive answer with little or no reference to case extract. Mere listing of points. Answer is not directly relevant to question.	1-2															
E	Stand with relevant substantiation	1-3															
(d)	<p>From Extract 3, structural reforms is said to be a “powerful medicine to heal a stagnant economy... yet this medicine, however, can taste extremely bitter for some people”</p> <p>Explain the positive and negative impact of structural reforms on the standard of living in Japan and comment on its overall impact on Japan’s standard of living.</p>	[7]															
	<p>Introduction: One of the Structural reforms include relaxing labour laws in the economy. By relaxing labour laws, it has a long term impact on improved productivity and an opportunity to lift up the stagnant economy, leading to higher material standard of living in Japan in the long run. However, there should be considerations of temporary fall in material standard of living in the short run as workers may experience layoffs and a fall in wages. Non material standard of living can also be affected due to rise in stress level of getting laid off.</p> <p><u>Positive impact on Standard of living:</u> According to Extract 3, the structural reforms would include relaxing labour laws such as migration rules. This could lead to more foreign labour flowing into Japan thus increasing the supply of labour. An increase in supply of labour will result in a surplus of labour at current wage thus causing wages to be depressed. Lower wages due to relaxed labour laws will help to lower cost of production and attract foreign direct investment. This will help to boost creation of jobs in Japan. With rise in employment, this would lead to higher income for Japan’s residents and as consumption of goods and services increase with higher purchasing power, it helps to achieve higher material standard of living.</p> <p><u>Negative impact on Standard of living:</u> The falling wages will be a concern for the lower skilled Japanese workers. With the influx of foreign lower skilled workers taking up jobs in sectors such as construction and farming, increased supply of lower skilled workers will depress wages for these Japanese lower skilled workers. This will widen the income gap between the skilled and unskilled workers in Japan.</p>																

	<p>With rising income inequality, material standard of living will be lower as more of these lower skilled workers will face falling income and lower purchasing power.</p> <p>Conclusion: Structural reforms most likely will result in a lower standard of living for</p> <table border="1"> <thead> <tr> <th>Level</th> <th>Knowledge, Application/Understanding, and Analysis</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>L2</td> <td>For a well-developed explanation of both positive and negative impact on standard of living. Capped at 3m if there is developed explanation on either positive OR negative impact on standard of living.</td> <td>3 – 5</td> </tr> <tr> <td>L1</td> <td>For an undeveloped or underdeveloped explanation of both positive and negative impact on standard of living.</td> <td>1 – 2</td> </tr> <tr> <td>E</td> <td>Up to 2 marks for valid comment(s) on the overall conclusion on standard of living.</td> <td>1 – 2</td> </tr> </tbody> </table> <p>Japan's residents as the effect of layoffs and a depression of wages will be more immediate. However, in the long term, if the stagnant Japanese economy can be lifted up, perhaps with the expected rise in wages, it will lead to the longer term higher standard of living.</p>	Level	Knowledge, Application/Understanding, and Analysis	Marks	L2	For a well-developed explanation of both positive and negative impact on standard of living. Capped at 3m if there is developed explanation on either positive OR negative impact on standard of living.	3 – 5	L1	For an undeveloped or underdeveloped explanation of both positive and negative impact on standard of living.	1 – 2	E	Up to 2 marks for valid comment(s) on the overall conclusion on standard of living.	1 – 2	
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E	Up to 2 marks for valid comment(s) on the overall conclusion on standard of living.	1 – 2												
(e)	<p>With reference to the data and/or your own knowledge, explain and comment on the different stance that Bank of Japan (BOJ) and Monetary Authority of Singapore (MAS) have taken towards the exchange rate of their countries' currencies.</p>	[9]												
	<p><u>Japan's stance on exchange rate:</u></p> <p>Bank of Japan has focused on weakening the yen (Ext 4) to boost economic growth and to pursue a higher inflation rate.</p> <p>A weakened Japanese yen makes Japanese exports cheaper in foreign currencies and its imports more expensive in Yen. This causes foreigners to switch from their home products towards Japanese exports, which are now more price competitive, while locals would tend to switch their expenditure from imports to locally produced goods and services. The increase in demand for exports by foreigners leads to an increase in export revenue while the decrease in quantity demanded for imports leads to a decrease in import expenditure, assuming that the demand for imports is price elastic. The value of net exports thus increases. This increases AD, shifting the AD curve to the right from AD1 to AD2 in Fig 1 below. Assuming that the Japanese economy is near full employment, real GDP increases, thus boosting actual growth. The increase in AD also results in an increase in general price level (GPL), resulting in demand-pull inflation.</p> <p>Moreover, the higher prices of imported inputs in Yen may also cause a rise in unit cost of production, causing AS to rise. The horizontal portion of AS will shift upwards from AS1 to AS2, causing general price level to rise, and imported inflation (cost-push inflation) results. Hence, a weak Japanese Yen will help to lift Japan's inflation rate towards their policy target of 2%.</p>													

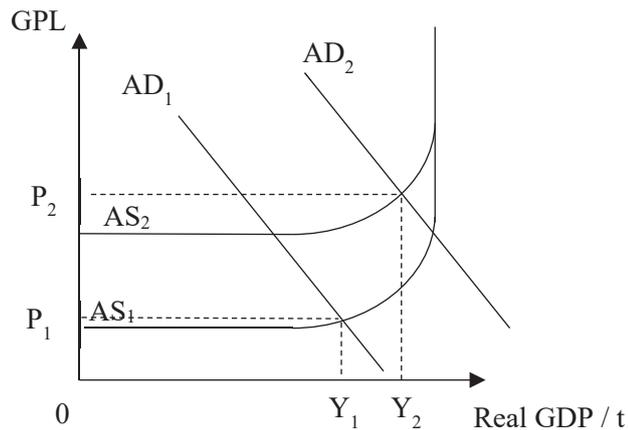


Fig. 1

Singapore's stance on exchange rate:

The Monetary Authority of Singapore (MAS) has tightened its monetary policy, allowing for a modest and gradual appreciation of the Singapore dollar (SGD) (Ext 4) to curb imported inflation and to boost growth in the longer term.

A modest and gradual appreciation of the SGD is useful in controlling both cost-push and demand-pull inflation in Singapore. As the SGD appreciates against foreign currencies, the price of imports becomes relatively cheaper in SGD. Given Singapore's heavy reliance on imported inputs (such as oil and food), having relatively cheaper imported inputs helps to reduce the unit cost of production for many firms, AS increases and the horizontal portion of AS shifts downwards, resulting in a fall in GPL, thus alleviating imported inflation (cost-push inflation).

In addition, appreciation in SGD will result in Singapore's exports becoming more expensive in foreign currency terms, leading to a fall in demand for Singapore's exports and consequently lower export revenue earned. With imports being cheaper in Singapore dollar terms, domestic consumers would increase their quantity demanded for imports and assuming the demand for imports is price elastic, this will lead to an increase in import expenditure. As export revenue falls and import expenditure rises, the (X-M) component of AD falls, leading to a decrease in AD and hence GPL falls, controlling demand-pull inflation.

In the longer term, the appreciation of SGD will help to improve the price competitiveness of Singapore's exports by curbing imported inflation and keeping the price of imported inputs low. This will in turn help increase Singapore's export revenue assuming that the demand for exports is price elastic, thus helping to boost actual growth eventually.

Comment on the different stance by Bank of Japan and MAS:

The different stance by Bank of Japan and MAS is largely due to nature of Japan's and Singapore's economies as well as the macroeconomic problems faced by the 2 countries.

Japan's failure to meet the inflation target of 2% and the concern that having an inflation rate that is too low for a prolonged period will cause the economy to lose its momentum (Ext 3). Japan's economic growth is also largely reliant on exports

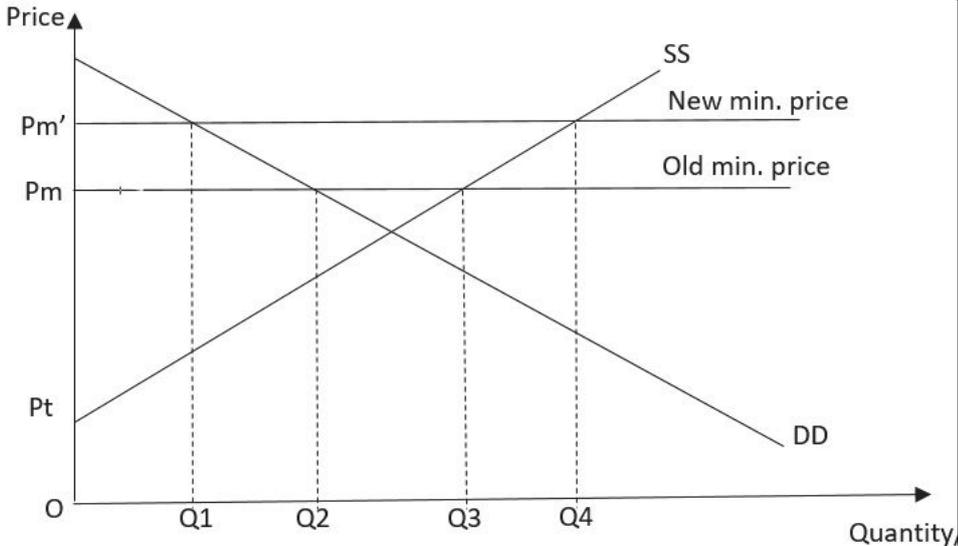
(Ext 4). Hence, Bank of Japan has adopted a policy of a weak yen to boost exports and inflation.

On the other hand, Singapore's lack of natural resources causes it to be highly reliant on imported inputs and imported final goods and services. This renders it susceptible to imported inflation, which is expected to increase (Ext 4). Moreover, Singapore's economic growth is slowing (Ext 4). Since exports is a major contributor to Singapore's AD, thus MAS decided to appreciate the SGD to keep the prices of imported inputs low, which in turn will boost our price competitiveness of our exports.

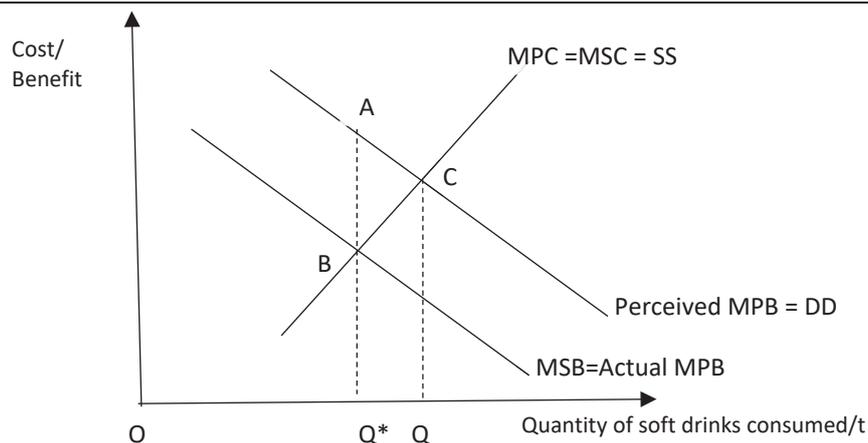
Level	Knowledge, Application/Understanding, and Analysis	Marks
L2	For a well-developed explanation of the stance for both Japan and Singapore.	4 – 6
L1	For an undeveloped or underdeveloped explanation of the stance for both Japan and Singapore. OR For a well-developed explanation of the stance for only one of the countries.	1 – 3
E	Up to 3 marks for valid comment(s) on the different stance adopted by Japan and Singapore.	1 – 3

## Suggested Answers to Question 2

(a)	<p><b>Using Table 3, account for the change in average prices for sugar worldwide from 2014 to 2016.</b></p>	<b>[3]</b>																									
	<p>The average price for sugar has fallen from 2014 to 2015 as the surplus of sugar stemming from higher production than consumption has put a downward pressure on sugar prices. [max 2]</p> <p>The average price of sugar rose thereafter in 2016 as a result of the shortage that arose from the world consumption exceeding the production levels of sugar, causing an upward pressure in the average prices of sugar. [max 2]</p> <p><i>Workings:</i></p> <table border="1"> <thead> <tr> <th></th> <th>Production (A)</th> <th>Consumption (B)</th> <th>Difference (A-B) (surplus/shortage)</th> <th>Avg. price</th> </tr> </thead> <tbody> <tr> <td>2014</td> <td>181.3</td> <td>176</td> <td>5.3</td> <td>0.37</td> </tr> <tr> <td>2015</td> <td>180.7</td> <td>178.7</td> <td>2</td> <td>0.3</td> </tr> <tr> <td>2016</td> <td>174.7</td> <td>180</td> <td>-5.3</td> <td>0.4</td> </tr> <tr> <td>2017</td> <td>178</td> <td>181</td> <td>-3</td> <td>n/a</td> </tr> </tbody> </table>		Production (A)	Consumption (B)	Difference (A-B) (surplus/shortage)	Avg. price	2014	181.3	176	5.3	0.37	2015	180.7	178.7	2	0.3	2016	174.7	180	-5.3	0.4	2017	178	181	-3	n/a	
	Production (A)	Consumption (B)	Difference (A-B) (surplus/shortage)	Avg. price																							
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2016	174.7	180	-5.3	0.4																							
2017	178	181	-3	n/a																							
(b)	<p><b>Using Extract 5, explain the falling trend of global sugar prices.</b></p> <p>The falling trend in global sugar prices can be explained by the change in equilibrium quantity in the global sugar market.</p> <p>There is a change in tastes and preferences towards unsweetened beverages (Extract 5, para 2). With beverage firms reducing sugar content in sugary drinks, the demand for sugar falls since less is needed by firms for production. [2]</p> <p>Global supply is increasing (Extract 5, para 3). Part of this is due to countries such as India encouraging production through subsidising sugar exports. Subsidies lower marginal cost of production for producers, incentivising them to increase supply in view of greater profitability. [2]</p> <p>With a fall in demand and also rise in supply of sugar, there will be a surplus at the initial price level resulting in downward price pressure. As prices fall, there is a rise in quantity demanded (<math>Q_d</math>) as buyers are more willing and able to pay and a fall in quantity supplied (<math>Q_s</math>) due to lower profits for producers. A lower equilibrium price results eventually when <math>Q_d=Q_s</math> explaining the falling trend of global sugar prices. [2]</p>	<b>[6]</b>																									
(c)	<p><b>(i) With the help of a diagram, explain why 'government spending has been rising with the increase in sugar stockpiles in India' (Extract 6).</b></p> <p><i>Background: The increase in sugar stockpiles arise from the government's efforts to support the minimum pricing for sugar. The price floor is imposed to ensure that the farmers have sufficient incomes especially during periods when prices of farming commodities fall too low (i.e. during bumper season, supply increases significantly).</i></p> <p>A higher minimum price will raise the price of sugar from <math>P_m</math> to <math>P_m'</math>, thereby increasing the <b>surplus</b> from <math>Q_2Q_3</math> at <math>P_m</math> to <math>Q_1Q_4</math> at <math>P_m'</math>. [1] The quantity of sugar bought by consumers will fall from <math>Q_2</math> to <math>Q_1</math>. Thus, the government will buy over a larger surplus at the new minimum price</p>	<b>[3]</b>																									

	<p>imposed, increasing government expenditure from <math>P_m(Q_2-Q_3)</math> to <math>P_m'(Q_1-Q_4)</math>. [1]</p> 	
(ii)	<p><b>Using the concept of price elasticity of demand, explain how the rise in the minimum price will affect consumer expenditure on sugar in India and comment on whether you believe such an impact is certain.</b></p>	[6]
	<p>Price elasticity of demand measures the responsiveness of consumers in changing the quantity demanded of a good to a change in the price of the good itself, ceteris paribus. The demand for sugar is likely to be price inelastic given the lack of close substitutes, as evidenced by the limited applications of artificial sweeteners. [2]</p> <p>Hence, the rise in the minimum pricing of sugar will lead to a rise in price and a less than proportionate fall in the quantity demanded for sugar. [1]  <b>Hence, the consumer expenditure (<math>TE=P \times Q</math>) will likely rise as the increase in consumer expenditure due to the rise in price will exceed the decrease in consumer expenditure due to the less than proportionate fall in quantity.</b> [1]</p> <p>Possible evaluative comments (max 1-2):</p> <ol style="list-style-type: none"> <li>1. The impact on consumer expenditure is likely to be certain. While the minimum pricing is imposed at 31 rupees per kg (Ex. 6, line 3), it still takes up a relative small proportion of consumers' income. Therefore, they are likely to be unresponsive to the price change regardless of the availability of substitutes. The consumer expenditure for sugar is bound to increase.</li> <li>2. Due to imperfect information, the government may not set an effective minimum price that lies above the market equilibrium price. This might have prompted the revision. However, if the revised minimum price remains ineffective, consumer expenditure remains unchanged based on the market equilibrium price and quantity.</li> <li>3. Apart from the minimum price, other demand factors may also have an impact on consumer expenditure. For example, if taste and preferences change in the longer term away from sugar due</li> </ol>	

		to promotional campaigns, the fall in demand may decrease the overall consumer expenditure.	
(d)	(i)	<p><b>With reference to Extract 7, assess two reasons why the British government would like to intervene in the market for soft drinks.</b></p> <p>Extract 2 suggests that soft drinks may be a form of demerit good as its consumption has led to costs for both society and self.</p> <p><b>Explain how negative externalities associated with the consumption of soft drinks leads to market failure</b></p> <ul style="list-style-type: none"> <li>Negative externalities are external costs accrued to 3<sup>rd</sup> parties, who are not directly involved in the consumption or production of the good, without having to pay for it.</li> <li>One example of who suffers highlighted in Extract 2 are the firms and economy that suffer a fall in productivity due to the health problems affecting workers that consume soft drinks.</li> <li>The presence of the external cost causes a divergence between MPC and MSC by the amount of MEC. Assuming there are no external benefits, <math>MPB=MSB=DD</math>. Profit motivated firms disregard the MEC and thus the MPC is representative of the SS curve. Individuals will consume soft drinks at the market equilibrium quantity, <math>Q</math>, where <math>DD=SS</math>. However, socially optimum level of consumption of soft drinks by the economy is where <math>MSB = MSC</math> and all true costs and benefits have been taken into consideration at <math>Q^*</math>.</li> <li>From <math>Q^*</math> to <math>Q</math>, there is over-consumption of soft drinks resulting in market failure. For <math>Q^*-Q</math>, the additional cost exceeds the additional benefit leading to a net loss to society as depicted by the deadweight loss area ABC.</li> </ul> <p><b>Explain how ignorance of private benefits associated with the consumption of soft drinks leads to market failure</b></p> <ul style="list-style-type: none"> <li>According to Extract 2, children are often ignorant about the adverse health effects of soft drink consumption such as obesity.</li> <li>Hence the MPB perceived is higher than the MPB actual. As analysed previously, the consumption at the market equilibrium, <math>Q</math>, exceeds the social optimal quantity of consumption at <math>Q^*</math> resulting in an over-consumption of <math>Q^*Q</math>.</li> </ul>	[9]



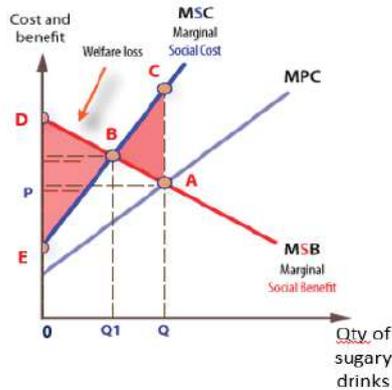
[Stand] The more significant source of market failure that drives the government to intervene and decrease the consumption of soft drinks is likely ignorance.

[Substantiation] While Extract 2 hints at the impact of negative externalities associated with consumption of soft drinks, it is difficult to draw a definite causal effect between soft drinks and health issues faced by workers. In contrast, the huge amounts of sugar consumed by children have been more definitively linked to soft drinks and their relative youth indicates that the degree of ignorance is likely to be far more significant.

Level	Descriptor	Marks
L2	Rigorous analysis of two sources of market failure that is backed by case evidence. Likely includes the use of relevant diagrammatic analysis.	5-7
L1	Descriptive answer with little or no reference to case extract. Only 1 source of market failure analysed.	1-4
E	Stand with relevant substantiation that compares the significance of the two sources of market failure.	1-3

(ii)	<b>Explain two possible factors that the UK government should consider in deciding whether to impose a ban on sugary drinks.</b>	<b>[6]</b>
	The UK government seeks to increase the society's welfare in a bid to ensure microeconomic goals as such allocative efficiency as well as equity are achieved. In deciding whether a ban will be imposed on sugary drinks, it will consider its <u>benefits</u> and <u>costs</u> .	

The government will consider **possible welfare improvement** from the use of ban. If the government were to impose a ban, the quantity of sugary drinks will fall to zero. Hence, there will be welfare loss from the under-consumption of sugary drinks. If the welfare loss arising from the ban (area DBE) is smaller than the welfare gains arising from the curbing of overconsumption of sugary drinks (area ABC), then the government will proceed with the ban as it improves the society's welfare.

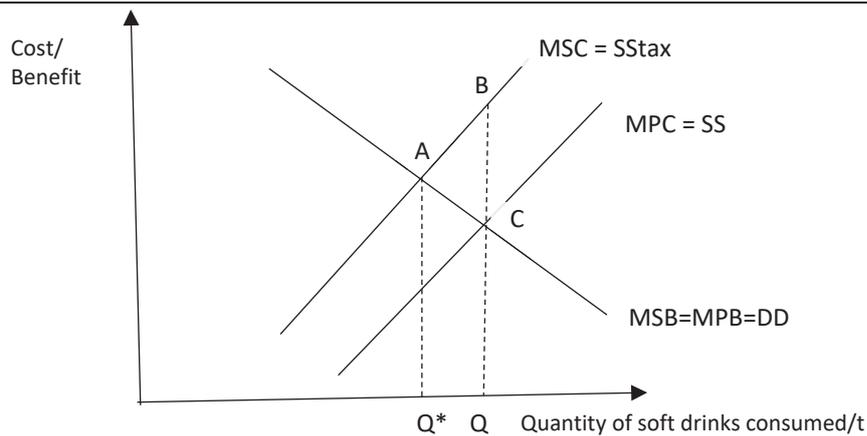


The government will also consider the **possible cost of the ban (i.e. unemployment)**. With the ban in sugary drinks, the local production of sugary drink will fall from  $Q_1$  to 0. Therefore, the derived demand for labour working in the sugary drink industries will fall and unemployment may result if the workers are unable to find jobs in other industries given their limited skillset.

Other possible factors:

- Loss of tax revenues from sugary drinks taxes (forgoing an estimated of £520 million in revenues based on Extract 3)
- Consumers will turn to other undesirable alternatives (i.e. alcohol); Extract 3: "Some also worry that the increase in the price of high-sugar drinks due to sugar tax could lead to an increase in the purchase of lager, diet drinks and juice."

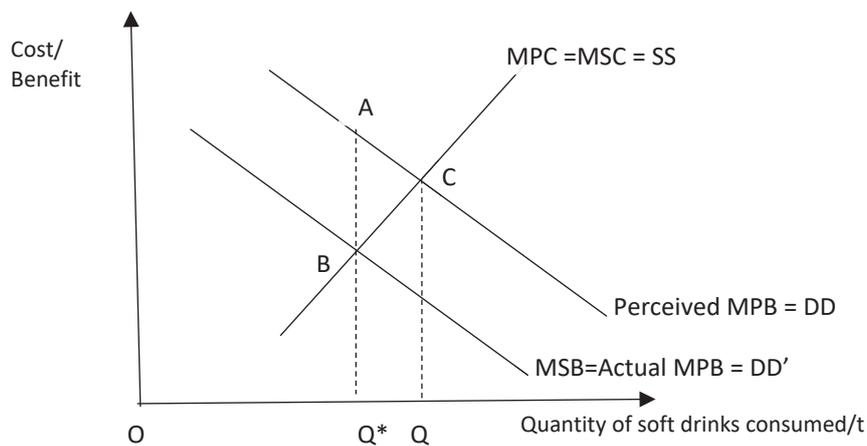
(iii)	<p><b>With reference to Extracts 7 and 8, evaluate the effectiveness of policies used to address the problem of sugar overconsumption by the UK government.</b></p>	<p><b>[12]</b></p>
	<p><b>Sugar tax (Extract 2)</b>          The sugar tax raises the MCOP for producers thus lowering the SS from SS to SStax. Assuming the per unit tax is equivalent to the MEC, the new market equilibrium will coincide with the social optimal quantity of consumption, thus eliminating the allocative inefficiency associated with the overconsumption of <math>Q^*Q</math> in the diagram below.</p>	



Evaluation: With imperfect information, it may be difficult for the government to set the right amount of tax to address the overconsumption. Thus there may be lingering welfare loss or loss associated with underconsumption if too high a tax is set. Furthermore given the price inelastic demand of sugar as supported by Extract 3, the government might find resistance setting a high enough tax to effectively deal with the market failure.

**Restrictions on advertising and clearer food labelling (Extract 2)**

These measures will help lower the level of ignorance faced by children and parents respectively. A more accurate perception of the true benefits of food and beverages with high sugar content will lower the DD for them from DD to DD' as tastes and preferences adjust. If successful, DD should fall sufficiently such that there is no disparity between the perceived and actual MPB, thereby fully eliminating the overconsumption  $Q^*Q$  due to ignorance as seen in the diagram below.

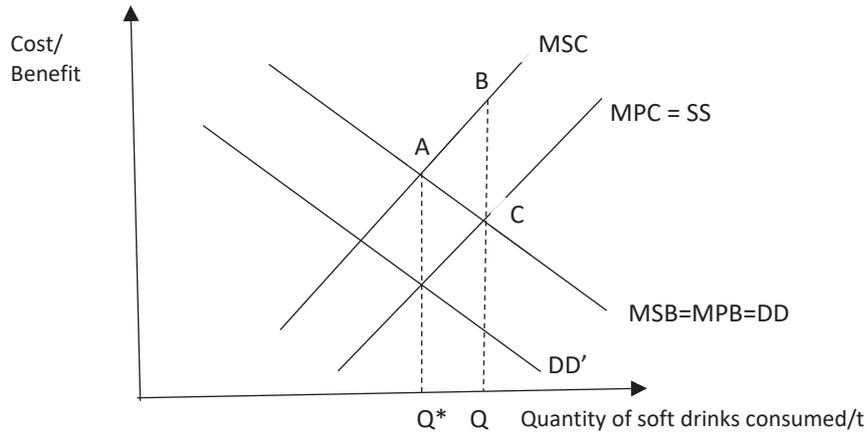


Evaluation: Tastes and preferences are often resistant to change particularly in the short term (Extract 3). This will limit the effectiveness of the measure in reducing DD and thus fully eliminating the overconsumption.

**Reformulation of food products (Extract 3)**

The greater availability of options with lower sugar content serving as a substitute will reduce the DD for food and beverages with high sugar content from DD to DD'. If successful, the new market equilibrium will be

at the social optimal level of consumption  $Q^*$ , where  $DD'=SS$ , thus eliminating the overconsumption of  $Q^*Q$ .



Evaluation: Substitutes with lower sugar content may not be deemed as a close substitute due to significant taste or price differences. Thus the fall in DD in for the traditional products may not be significant, limiting the effectiveness of the measure in reducing the overconsumption.

Conclusion: While each of the policies possess inherent limitations, the overconsumption can be effectively tackled through a combined implementation of the various policies as they address the diminishing returns of each individual policy as well as allow both reasons for the overconsumption to be addressed.

	Descriptors	Marks
L3	Strong analysis of at least 2-3 policies raised in the extracts. Analysis ought to be accompanied with the relevant diagrams demonstrating how the overconsumption is addressed. There should be reference to policies tackling both externalities and ignorance to score higher marks in the band.	6-9
L2	Descriptive explanation of policies that can tackle the overconsumption. Answers may not link clearly to the reduction of the overconsumption and/or to the relevant demand and supply concepts.	3-5
L1	Some knowledge of the relevant policies but answer contains significant theoretical errors or fails to address the question.	1-2
E	Stand and substantiation pertaining to the effectiveness of the policies. A final evaluative stand that is substantiated is necessary to score the all the evaluative marks available.	1-3





YISHUN INNOVA JUNIOR COLLEGE  
JC 2 PRELIMINARY EXAMINATION  
**Higher 1**

CANDIDATE  
NAME

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INDEX NO

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**ECONOMICS**

**8823/01**

Paper 1 Case Study Questions

**2 September 2019**

**3 hours**

Additional Materials:          Answer Booklet

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**READ THESE INSTRUCTIONS FIRST**

Write your index number and name on all the work you hand in.

Write in dark blue or black pen.

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

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

There are **two** questions in this paper. Answer **all** questions.

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

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

Answer **all** questions.

## Question 1 Government Support: Beneficial or Not?

### Extract 1: Problems with subsidies

Subsidies have been provided by governments to encourage a wide range of activities or for reasons they deem valid. However, over time, subsidies which once served a useful purpose may become entrenched and serve primarily the interests of participants in the industry receiving the subsidies. There is also a tendency for subsidies to continue long after they are necessary. This will strain governments' resources eventually.

Source: <http://www.fao.org>

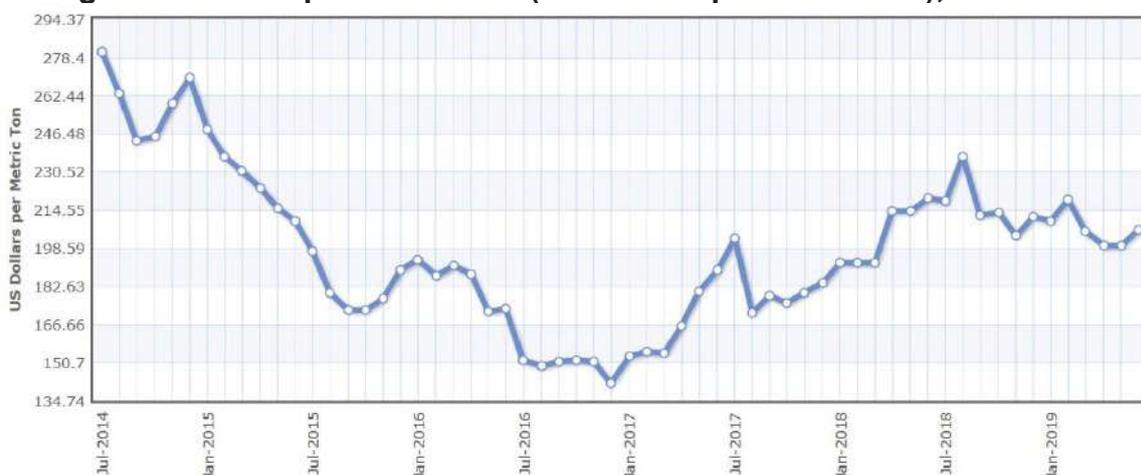
### Extract 2: Bank of Botswana urges government to phase out subsidies

Bank of Botswana (BoB) presented a paper on funding options for the country's industrialisation and transition into a high-income economy. It highlighted that infrastructure would be the key to power the country's industrialisation. But blanket subsidies and tax exemptions were locking up public funding that could be better directed towards infrastructure development. "There's a case for the gradual removal of some subsidies that constitute a large proportion of government budget and reallocate resources to infrastructure," it said.

Head of research and financial stability, Tshokologo Kganetsano said, "The government has subsidised food items because they want to target the poor, but others also benefit even though they are not the poor. Fuel is another candidate for a removal of subsidy. Look at the price of petrol in Botswana and compare to South Africa. How much are South Africans paying? Even education is another candidate, but I don't want to go into details. If you go to rural areas, government provides a lot of things. The subsidy is benefitting people who are not prepared to do serious farming."

Source: <http://www.mmegi.bw>

**Figure 1: Global price of wheat (US Dollars per metric ton), 2014 -2018**



Source: <https://www.indexmundi.com>

**Extract 3: Wheat prices continue to see volatility**

Wheat prices are experiencing a period of excessive volatility, according to the Food Security Portal's Excessive Food Price Variability Early Warning System. From 2005 to 2013 the land used to cultivate wheat, soy, and corn grew by 11% globally. Worldwide wheat production is reaching the highest volume in 2014. "The new abundance will have broad effects, weakening incomes of farmers and companies that supply them," writes Gregory Meyer of the Financial Times. And what has caused this explosion in grain supplies? Prices. They were unusually high in recent years and have encouraged farmers to pour money into boosting production.

However in 2018, there are rumors of potential wheat export bans in Russia and the Ukraine, two of the larger exporters of wheat, leading to spikes in wheat prices in the global markets. In addition, severe hot weather and drought conditions in several major producing regions have also affected wheat prices in recent weeks. The European Union, the Black Sea Region, and Australia are all experiencing significantly dry conditions that have stunted wheat growth and reduced production prospects.

Such uncertainty and price volatility have raised concerns and in some countries, governments have seen a need to support the workings of the market.

Source: *various*

**Extract 4: Revamp government support to make sure it protect stakeholders**

In recent years, developing countries' agricultural subsidies have grown rapidly. China's agricultural subsidies now dwarf those in the US and EU combined. From 2005 to 2011, India's minimum price supports for wheat and rice grew by 72% and 75%, respectively, significantly exceeding those in the US.

If done well, these developing countries' spending in agriculture could support innovation, help build a stronger middle class, feed the hungry, generate export revenue and pull millions out of poverty. But such spending must be targeted and short term. For example, a subsidy could be used to support the adoption of technologies.

However, such spending also can hurt efforts to promote efficiency and more sustainable agriculture, as this mean that farming to meet society's current needs compromises the ability of future generations to meet their needs. For example, India subsidises the cost of energy to pump water, which encourages producers to pump more water than they need. Subsidies also lead producers to overuse fertilisers or pesticides, resulting in soil degradation, groundwater depletion and other negative environmental impacts.

Governments need to wake up to the long-term implications of agricultural subsidies as it can stifle innovation and make producers both less competitive and more dependent on government. Many developing countries still struggle to provide basic

services such as clean air and water, education, public services, infrastructure and healthcare. With these competing needs, we need to ensure that any agricultural subsidies increase productivity, efficiency and global competitiveness.

Source: <https://www.theguardian.com/>

### **Extract 5: General subsidy for higher education**

Should the government offer a general subsidy, i.e. subsidy to everyone who attends higher education institutions, in developing countries?

The costs and benefits of education are simple to enumerate. Social costs include everything that must be given up in order to produce the education. These include the resources that must go into paying for tuition and books, and a student's living expenses such as food and housing. They also include the foregone income that the student could have earned by working instead of studying.

Social benefits include the private benefits enjoyed directly by the individual, such as higher earnings through life. They also include public benefits. These include having (a) a critical mass of well-informed citizens; (b) a larger pool of capable business people who can run more efficient businesses and expand the economic pie; (c) political leaders who can understand fast-evolving conditions in the local and international arena; and (d) scientists who can play key roles in adapting and integrating developed world practices to advance a country.

A general subsidy becomes a good idea if the gains produced compare favourably with those of alternative policies. However, investing in primary and secondary school education and primary health care often give a much better return on public funds than subsidising higher education. Helping the well-off obtain higher education when many of them already manage to do so without government help does not make sense economically. Hence, governments should reconsider the case for a general subsidy for higher education and look into more targeted subsidies instead.

Source: *Journal of Higher Education in Africa*, 2003

**Questions**

- (a) (i) What is the main characteristic of a normative statement? Identify one example of a normative statement from Extract 2. [2]
- (ii) Using the production possibility curve diagram, explain the likely effects of directing more public funding towards infrastructure development on the current and future standard of living of Botswana. [6]
- (b) (i) Describe the trend in the global price of wheat from 2014 to 2018. [2]
- (ii) Account for the trend in the global price of wheat from 2014 to 2018. [4]
- (c) Using a demand and supply diagram, explain the likely consequences of minimum price support on the Indian farmers and government, and comment on the effectiveness of this government measure. [7]
- (d) With reference to Extract 4, discuss the extent to which agricultural subsidies will hurt efforts to promote more sustainable agriculture. [8]
- (e) With reference to Extract 5, explain how a rational student decides on whether to participate in higher education in the absence of any form of government intervention. [4]
- (f) A government subsidises a wide range of economic activities that it wants to encourage or for reasons it deems valid.
- Discuss the view that the provision of subsidies leads to an efficient allocation of an economy's resources. [12]

[Total: 45]



## Question 2 Economic growth in Singapore and other countries

**Table 1: Growth and Inflation Rates of Selected Economies**

	Real GDP Growth rates (annual %)			Inflation, Consumer prices (annual %)		
	2015	2016	2017	2015	2016	2017
<b>Japan</b>	1.2	0.6	1.9	0.8	-0.1	1.9
<b>Malaysia</b>	5.1	4.2	5.9	2.1	2.1	5.9
<b>Singapore</b>	2.9	3.0	3.7	-0.5	-0.5	3.7
<b>United Kingdom</b>	2.3	1.8	1.8	0.4	1.0	1.8
<b>United States (U.S.)</b>	2.9	1.6	2.2	0.1	1.3	2.2

Source: *International Monetary Fund*

### Extract 6: Road to recovery

2016 was a slog for the world economy. Weak international trade and subdued investment, among other culprits, conspired to slow world growth to its weakest pace since 2009. And even though the outlook is modestly brighter in 2017, unusually heightened uncertainty about policy direction in major economies casts a long shadow over the prospects of economic confidence and recovery. Indeed, some of these economies are not optimistic about the prospect of more production and increase in jobs created.

The new U.S. administration is expected to diverge sharply from past policies. Because developments in the U.S. economy, the world's largest, have effects far beyond its shores, the changes in policies will likely have substantial global implications. What, for example, would be the effect of the promised fiscal stimulus? Improvements in US growth in the near term can potentially have knock-on benefits to other economies. That said, the full impact of any fiscal stimulus would depend on a host of factors.

At the same time, growth remains weak in many countries, where low inflation indicates that slack has yet to be eliminated. Some are being held back by weak productivity growth. Commodity exporters in many developing economies such as the Middle East face stagnant growth as commodity prices fall.

With greater risks to growth in the medium rather than short-term, this cyclical upturn after a few years of disappointing growth provides an ideal window of opportunity to undertake critical structural reforms to boost productivity and labour supply. Such reforms would prevent any possible slowdown, raise potential output and increase living standards.

Adapted from *IMF World Economic Outlook, October 2017* and the *People's Daily*,  
15 February 2017

**Extract 7: Singapore Macroeconomic Review: October 2017**

The Singapore economy has performed slightly better than envisaged six months ago, while inflation has kept well within expectations.

GDP growth 2017 is expected to be in the upper half of the 2–3% forecasted. The economy grew by 6.3% in Q3 2017, following the 2.4% recorded in Q2, underpinned by strong expansion in electronics production, reflecting an enduring upturn in global demand for IT products. Trade related services and some domestic-oriented industries also performed better. However, the marine and offshore engineering and private residential construction industries remained weak.

MAS Core Inflation, which excludes the costs of private road transport and accommodation, fell marginally to 1.5% year-on-year in July-August 2017, while the CPI-All Items inflation fell from 0.8% to 0.5%. The decline was largely due to smaller year-ago price increases for oil-related components, and lower car prices as well.

Imported inflation is likely to rise mildly, as global demand improves. Oil prices are expected to increase slightly in 2018 while food commodity prices may rise modestly. Economy-wide cost pressures should remain restrained as wage pressures are unlikely to accelerate, as the slack which had accumulated in the labour market takes time to be fully absorbed and as productivity grows gradually. Non-labour costs such as commercial and retail rentals will stay subdued.

MAS Core Inflation, is projected to be at around 1.5% in 2017 and average 1–2% next year. Given the economic outlook at this stage and consistent with medium-term price stability, MAS will maintain the rate of appreciation of the S\$NEER policy band at zero percent, in what is widely seen as a bearish stance for its policy. In fact, Singapore had only previously adopted a zero slope in times of recession. Analysts note that the central bank's move is a response to expectations that inflation will stay lower for longer.

*Adapted from IMF World Economic Outlook, October 2017*

**Extract 8: Singapore's productivity growth – A work in progress**

Data released by the Ministry of Trade and Industry (MTI) showed that overall labour productivity<sup>1</sup> grew by 4.5% in 2017, its highest since 2010, driven by gains in externally-oriented sectors such as manufacturing, wholesale trade and finance and insurance, where productivity jumped by 6.7%. By contrast, productivity in domestically-oriented sectors dipped 0.2%.

Singapore has been working to push up its labour productivity levels for years, given that it forms a key part of the equation in ensuring sustainable wage rises and economic expansion as the country's workforce growth slows, as well as attract domestic and foreign firms. This would allow living standards to be raised.

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<sup>1</sup> Labour productivity is measured by the output per hour worked.

Often, wage rises can occur when firms increase their demand for labour. This can in turn happen when there is an increase in the quality of labour, or when there is an increase in demand for the goods and services that the labour can produce.

But given how productivity gains were mainly fuelled by the externally-oriented sectors, Singapore's productivity push remained a "work in progress", said MTI's Loh Khum Yean. Firms in externally-oriented sectors are "incentivised to optimise operations and seek efficient production methods to remain competitive", according to MTI.

Economists echoed that view, with CIMB's Song Seng Wun describing productivity growth as an "outlier" due to a sharp rebound in global demand. "Simply put, it's about factories, which were less busy in the past two years suddenly becoming busier with orders, so it looked like we had a sharp improvement in productivity. It's mostly that, instead of factories implementing new effective ways of production."

Also, productivity growth may not be a big draw for firms in the current economic climate, where many are speculating a slowdown in global demand ahead.

Source: *Channel News Asia*, 17 April 2018

### **Extract 9: Ensuring inclusive economic growth**

After decades of high and sustained economic growth, the Singapore government has over the past decade placed a greater focus on "inclusive growth". This comes amidst a slowing long-term growth trends as the economy matures, greater economic shocks stemming from greater global uncertainties, a rapidly ageing population and more visible income disparities as Singapore positions itself as a global financial and technology hub.

One of the most visible aspect of the Government's commitment to inclusive growth has been the increase in fiscal transfers, even as the Government remains committed to maintaining fiscal sustainability and keeping the burden of taxation on middle and high income earners low. These transfers include:

- GST vouchers in the form of cash payouts, Medisave top-ups and utilities rebates based on HDB room-type
- Workfare Income Supplement (WIS), which tops-up to the wages of low wage earners (monthly income <\$2,300) above 35
- Pioneer Generation Package which provides financial assistance for all elderly Singaporeans born before 1950, especially through enhanced healthcare subsidies and subsidies for the payment of Medshield Life (national healthcare insurance). Similar benefits were extended in 2019 in the Merdeka Generation Package to those born before 1960
- Subsidies for childcare and kindergarten for all Singaporeans, with additional subsidies for lower and lower-middle income earners

Many observers want the Government to do more, noting that the Workfare payments are paltry especially for younger workers. A 37-year old earning \$1,500, for example, gets a monthly WIS payout of \$32 in cash and \$42 in CPF top-ups, and this may not significantly increase his disposable income.

However the Government is already funding social spending from 50% of the annual returns on its reserves, which is the maximum provided for under the Constitution. The Government has stressed that it is working hard to support lower wage workers move up the wage ladder through skills upgrading, which it also heavily subsidises and getting industries to adopt a Progressive Wage Model where firms in industries commit to training their workers to perform work requiring higher skills so that they can earn higher wages.

Adapted from *Various*

### Questions

- a) Explain whether the data provided in Table 1 is sufficient to conclude that the Japanese economy is experiencing an economic recovery in 2017. [4]
- b) Explain and comment on how “improvements in US growth in the near term can potentially have knock-on benefits to other economies (Extract 6).” [6]
- c) Using AD/AS analysis, explain how lower commodity prices would affect a commodity exporting country such as the United Arab Emirates and a commodity importing one such as Japan. [6]
- d) (i) Explain why exchange rate is an appropriate tool for the Singapore economy to moderate inflation. [4]
- (ii) Explain two factors that the MAS has to consider in making a decision to maintain the rate of appreciation of the S\$NEER policy band at zero percent. [4]
- e) Explain and comment on how productivity growth can increase standard of living in an economy like Singapore. [9]
- f) With reference to the case material and your own knowledge, assess the effectiveness of the policies in place to bring about inclusive economic growth in Singapore. [12]

[Total: 45]

- End of Paper -

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**Yishun Innova Junior College**  
**JC2 H1 Economics 2019**  
**Preliminary Examination**  
**Suggested Answers**  
**Paper 1**

**Question 1**

<b>(a)</b>	<b>(i)</b>	<b>What is the main characteristic of a normative statement? Identify one example of a normative statement from Extract 2.</b>	<b>[2]</b>
<u>Suggested Answer</u> Identification of value judgement as the main characteristic of normative statement Identification of a valid example from Extract 2			
<b>(a)</b>	<b>(ii)</b>	<b>Using the production possibility diagram, explain the likely effects of directing more public funding towards infrastructure development on the current and future standard of living of Botswana.</b>	<b>[6]</b>
<u>Suggested Answer</u> Fully-labelled diagram More production of infrastructure → movement along PPC → less resources available for production of consumer goods → lower current material standard of living More production of infrastructure → increases the quantity and quality of resources in the future → resulting in higher productive capacity → PPC shifts outwards → more goods and services are available for consumption in the future → future material standard of living improves			
<b>(b)</b>	<b>(i)</b>	<b>Describe the trend in the global price of wheat from 2014 to 2018.</b>	<b>[2]</b>
<u>Suggested Answer</u> <ul style="list-style-type: none"><li>• Generally falling</li><li>• Except for 2017-2018 (anomaly) OR</li><li>• Volatile</li></ul>			
<b>(b)</b>	<b>(ii)</b>	<b>Account for the trend in the global price of wheat from 2014 to 2018.</b>	<b>[4]</b>
<u>Suggested Answer</u> As global wheat prices increase, farmers find it more profitable to produce wheat instead of other food crops, thus switching over to producing wheat. Thus the supply of wheat increases, causing a surplus that creates a downward pressure on wheat prices.  However, the production of wheat is subjected to weather fluctuations which affects the supply of wheat. Hot and dry weather conditions lower the harvest of wheat, causing a shortage in the market and thus pushing up prices. OR			

As the demand for wheat is price inelastic due to it being an important staple for many countries, the changes in supply would lead to significant changes in prices.		
(c)		Using a demand and supply diagram, explain the likely consequences of minimum price support on the Indian farmers and government and comment on this government measure. [7]
<p><u>Suggested Answer</u></p> <p>Minimum price support diagram</p> <p>Explain how The government sets minimum prices to prevent them from falling below a certain level to protect producers' incomes as the industry is subject to supply fluctuations and thus prices are likely to fluctuate severely.</p> <p>Possible comments:</p> <ul style="list-style-type: none"> <li>• Surplus created farmers are not able to clear the stocks □ may try to evade prices</li> <li>• High price may discourage these farmers from finding more efficient methods of production and lower costs (lower efficiency)</li> <li>• High price may discourage farmers from producing alternative crops which they could produce more efficiently or which are in higher demand</li> <li>• Government will need to buy up the surplus. This might not be a sustainable in the long run given that government's budget is limited.</li> </ul>		
(d)		With reference to Extract 4, discuss the extent to which agricultural subsidies will hurt efforts to promote more sustainable agriculture. [8]
<p><u>Suggested Answer</u></p> <p><u>Introduction</u></p> <p>Sustainable agriculture is farming that meet society's current needs without compromising the ability of future generations to meet their needs. With more efforts now directed to manage the environmental aspects of agriculture, more attention should be given to the impact of agricultural subsidies.</p> <p><i>Thesis: Agricultural subsidies can undermine efforts to promote more sustainable agriculture</i></p> <p>Agricultural subsidies → lower unit COP of agricultural production → increase profitability of agriculture production → producers have more incentive to increase agriculture production → increase in demand for factor inputs required, e.g. increased use of fertilisers, pesticides → greater negative environmental impact, e.g. soil degradation → deterioration of quality of land available for use in agricultural production → compromising ability of future generations to use resources to meet their own needs</p> <p>Agricultural subsidies that lowers cost of inputs → lowers price of water of factor input, e.g. subsidies for cost of energy in water lower price of water → increase in quantity of water used → depletion of groundwater → less resources available for future generations</p> <p><i>Anti-thesis: Agricultural subsidies may not necessarily hurt efforts to promote sustainable agriculture</i></p>		

Agricultural subsidies can be given to support adoption of technology in farming → improvement in method of production → increase efficiency in production → less wastage of resources used in production → more resources available for future generations

Agricultural subsidies can be given to support R&D → innovation → better quality crops, e.g. more resilient → less need for fertilisers or pesticides → negative environmental impact minimized → limit erosion in quality of land used → ability of future generations to use resources to meet their own needs not compromised

*Conclusion*

Whether agricultural subsidies will hurt efforts to promote sustainable agriculture depends on the form subsidy takes or type of activities encouraged by the subsidy. If given to support innovation or adoption of technology, less likely to lead to negative environmental impact and resource depletion compared to if given to merely to help farmers to lower cost of production directly.

Level	Description	Mark
L2	A balanced answer with well-developed analysis addresses how agricultural subsidies can have both negative and positive impact on sustainable agriculture.	4-6
L1	A descriptive answer that lacks economic analysis.	1-3
E2	For an answer that gives evaluative statements that addresses the question.	2
E1	For an answer that gives unsupported evaluative statements.	1

**(e)** **With reference to Extract 5, explain how a rational student decides on whether to participate in higher education.** **[4]**

Suggested Answer

Private benefit: Knowledge and skills acquisition, higher-paying jobs  
 Private cost: College fees, time spent could be used to earn income (opportunity costs)  
 Participates if private benefits exceed private costs.

**(f)** **A government subsidises a wide range of economic activities that it wants to encourage or for reasons it deems valid.** **[12]**  
**Discuss the view that the provision of subsidies leads to an efficient allocation of an economy's resources.**

Suggested Answer

*Introduction*

- Explain meaning of efficient allocation of resources and implication of not achieving it
- Emphasise on need to ensure provision of subsidies is directed to the right areas

*Thesis: Provision of subsidies can lead to an efficient allocation of resources in cases when positive externalities exist*

- Explain what positive externalities is with the use of an example, e.g. education (Extract 5)
- Explain how the existence of positive externalities can result in under-consumption of education, i.e. market failure exists with the use of a diagram

- Explain how the use of a subsidy can increase consumption of education, leading to efficient allocation of resources, i.e. correct market failure

*Anti-thesis: Provision of subsidies might not lead to efficient allocation of resources*

- Need to consider extent of subsidies given: If subsidies given more than required (e.g. more than MEB) → over-consumption of good → too much resources allocated into market (Extract 5)
- Govt has other objectives in provision of subsidies: E.g. Govt could be more concerned about addressing problems of inequity → use of subsidies to lower prices of goods → lower income households are able to afford goods as well → greater consumption of goods, but not necessarily at socially optimal level → does not result in efficient allocation of resources (Extract 2)
- Govt subsidies might lead to unintended consequences which result in inefficient allocation of resources: E.g. overusage of water, fertilisers, pesticides → external cost generated → too much resources allocated to these areas → does not lead to efficient allocation of resources (Extract 4)

*Conclusion*

Whether provision of subsidies leads to efficient of resources depends on the objectives of govt intervention, the extent of subsidies given and possibility of unintended consequences arising.

L3	A balanced answer that includes a well-developed analysis of how provision of subsidies lead to efficient allocation of resources with considerations of its limitations, with good reference to the case materials, considering different economic activities or government aims (e.g. equity).	6 - 9
L2	A balanced answer that includes some analysis of how provision of subsidies can lead to efficient allocation of resources with considerations of its limitations, with some reference to case materials.	3 - 5
L1	An answer that is lacking in economic analysis, e.g. describing how subsidies work or some limitations with use of subsidies.	1 – 2
E2	For evaluative judgement that considers the analysis, weighing the appropriate factors for government consideration with good reference to case materials.	2 - 3
E1	For an answer that gives unsupported evaluative statements.	1

## Question 2

a)	<p><b>Explain whether the data provided in Table 1 is sufficient to conclude that the Japanese is experiencing an economic recovery in 2017.</b></p>	[4]
<p><u>Suggested Answer</u>  <i>Explain how data can show that Japan is experiencing economic recovery</i></p> <ul style="list-style-type: none"> <li>Improvement in GDP growth rate from 2016 to 2017: GDP is increasing at an increasing rate and could show an increase in rate of production and hence indicate economic recovery.</li> <li>Accompanied by inflation in 2017: increase in general price level (compared to deflation in 2016) could mean that the economy is nearing full employment and hence there is upward pressure on wages and general price level, signifying economic recovery</li> </ul> <p><i>Explain how data may be insufficient to conclude that Japan is experiencing economic recovery</i></p> <ul style="list-style-type: none"> <li>In spite of data, Japan may not be experiencing economic recovery: even with increased GDP, there may not be increased hiring if there was significant underemployment previously, or if the increase in demand for factors of production is more for capital.</li> <li>Data is not sufficient: the data provided does not show the unemployment rate for us to conclude on the proportion of unemployed in the economy.</li> <li>Data is not sufficient: the data provided is for 3 years and not sufficient to conclude that economic recovery is underway</li> </ul>		
b)	<p><b>Explain and comment on how “improvements in US growth in the near term can potentially have knock-on benefits to other economies (Extract 1).”</b></p>	[6]
<p><u>Suggested Answers</u>  An increase in US growth means an increase in income for the US. This could then lead to an increase in demand for imports by the US. Economies that are dependent on exports to the US will then face an increase in export revenue, and an increase in AD. This would cause an unplanned running down of stocks and firms would increase production and demand for more factors of production. This would reduce cyclical unemployment. At the same time, the real GDP of these economies would then increase via the multiplier process.</p> <p>However, the extent to which this happens can depend on:</p> <ul style="list-style-type: none"> <li>Proportion of the economy’s exports that are demanded by the US: the smaller this proportion, the less significant the impact of US growth on the economy</li> <li>Size of exports as a proportion of the country’s AD: the smaller this proportion, the less significant the impact of US growth on the economy</li> </ul>		
c)	<p><b>Using AD/AS analysis, explain how lower commodity prices would affect a commodity exporting country such as the United Arab Emirates and a commodity importing one such as Japan.</b></p>	[6]
<p><u>Suggested Answer</u>  <i>For a commodity exporting country</i>  Lower commodity prices would reduce the price of exports in foreign currency. Given that the demand for commodities tend to be price inelastic due to the lack of substitutes, export revenue would decrease and AD would decrease, leading to an unplanned accumulation of stocks. Firms decrease production and demand for less factors of production. Real GDP would fall via</p>		

the multiplier effect, and cyclical unemployment will rise. There may be less demand-pull inflation if the economy is near full employment as the decrease in demand for factors of production lead to a decrease in unit cost of production.

*For a commodity importing country*

Lower commodity prices would reduce the price of imports in domestic currency and lead to lower unit cost of production. This would then increase the AS of the economy and lead to deflation and actual growth.

<b>d)</b>	<b>(i)</b>	<b>Explain why exchange rate is an appropriate tool for the Singapore economy to moderate inflation.</b>	<b>[4]</b>
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Suggested Answer

Singapore is a small and open economy that:

- Relies on imported raw materials: an appreciation of the exchange rate would help to lower the price of imported raw materials, lowering the cost of production throughout the economy and moderate cost push inflation.
- Relies on export revenue: an appreciation of the exchange rate would increase the price of exports in foreign currency and lower import prices in local currency and if demand for exports and imports are both price elastic, then AD will fall. This would help to moderate demand-pull inflation.

<b>d)</b>	<b>(ii)</b>	<b>Explain two factors that the MAS has to consider in making a decision to maintain the rate of appreciation of the S\$NEER policy band at zero percent.</b>	<b>[4]</b>
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Suggested Answers

- Cost of maintaining zero percent appreciation: may lead to imported inflation, but this risk is quite low as imported inflation is only expected to rise mildly
- Benefit of maintaining zero percent appreciation: may lead to increase in demand for exports as compared to the past appreciation, there is effectively a depreciation and this would increase demand for exports and boost AD, particularly when economy is not doing well.

OR

- Effectiveness of policy
- Feasibility of policy

<b>e)</b>		<b>Explain and comment on how labour productivity growth can increase standard of living in an economy like Singapore.</b>	<b>[9]</b>
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Suggested Answer

*Explain how productivity growth can help to bring about wage increases and economic growth and hence improving standard of living*

- Productivity growth means an increase in output per hour worked. With such an increase in quality of labour, there will be an increase in demand for labour and this would lead to higher wages. With higher wages and assuming inflation is lower than wage rises, the purchasing power of citizens will increase, thereby increasing their material well-being.
- At the same time, with rising productivity, labour can receive higher wages for the same number of hours worked, and this could translate to a higher number of leisure hours that will increase their non-material well-being.
- Productivity growth can also increase the productive capacity of the economy. This would allow the economy to enjoy a simultaneous outward and downward shift in AS. This is

especially so as the quantity of factors of production in Singapore is unlikely to increase significantly with an ageing population and thus the economy has to rely on increasing the quality of labour to increase AS. This would allow the economy to enjoy potential growth.

*Comment on the extent to which standard of living can be raised for Singapore*

- 1) In spite of productivity growth, unemployment rates may increase or not be lowered
  - Takes time to see the effects of productivity growth on productive capacity and wage increases
  - Decrease in extent of underemployment may be captured as productivity growth and this will not lower unemployment rates
- 2) In the long run, productivity growth can help to attract FDI as foreign firms may be attracted to the pool of skilled labour. This would lead to an increase in AD in the future and further increase in productive capacity, thus ensuring that AD and AS rise in tandem, allowing for increase in real GDP and material well-being.
- 3) In spite of productivity growth, firms may not increase investment
  - If business outlook is bleak, firms may not project future returns favourably and may not increase their investment. Under such circumstances, AD may not increase in tandem with AS and real GDP, and hence purchasing power, may not increase.

<b>f)</b>		<b>Assess the effectiveness of the policies in place to bring about inclusive economic growth in Singapore.</b>	<b>[12]</b>
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Suggested Answer

*Explain how the policies can bring about inclusive growth in Singapore*

- Identify the policies: fiscal policy (increasing fiscal transfers) and supply-side policies (subsidising skills upgrading, encouraging the adoption of progressive wage model)
- Fiscal transfers can increase disposable income of lower-income households and lead to an increase in C, thereby increasing AD and leading to actual growth via the multiplier process.
- The benefits of this growth is enjoyed by more by lower-wage individuals who would benefit from additional subsidies and utilities rebates. Hence the growth improve income equality and is seen to be inclusive.
- Supply-side policies to subsidise skills upgrading would encourage more workers to go for training and would increase the **quality** of labour in the economy, thereby increasing the productive capacity of the **economy** in the long run and leading to potential growth.
- The benefits of the training will be felt by the workers as firms adopt a progressive wage models and the improvement in productivity would lead to higher wages. Hence, the growth would improve **income equality**.

*Explain the limitations of the policies in bringing about inclusive growth in Singapore*

- The amount of **fiscal** transfers given has to be significant to bring about a change in behavior in lower wage workers. For instance, the WIS may not lead to a large increase in disposable income for workers and thus they may not increase work effort and enjoy the benefit of economic growth.
- Supply-side policies which involve a change in the wage structure of firms, such as the progressive wage model, may take time to take effect and thus the effectiveness of such a policy may not be felt in the short run.

- The policies may lead to a fall in economic growth as the increase in fiscal transfers (in the form of social spending) may mean be financed by earnings from past reserves and could limit the ability of the government to carry out expansionary fiscal policy in future that would lead to an increase in AD and bring about actual growth. Thus, the policies may mean slower economic growth in future.

*Evaluative conclusion*

The effectiveness of the policies can depend on the receptiveness of lower wage workers to going for training, how widely the progressive wage model is adopted, and how much the subsidies are. The fiscal transfers tend to improve income equality in the short run and may lower economic growth, while the supply-side policies can improve income equality and raise economic growth in the long run. Thus, the policies that have been implemented largely complement each other, in that some are short-term in nature, to increase disposable income of lower-income workers, while there are others that are aimed at increasing the income of these workers.

L3 [6-9]	An answer that explains how the fiscal and supply-side policies may <u>and</u> may not be effective in bringing about growth that is sustained over a period of time, is broad-based across economic sectors, and creates productive employment opportunities for the majority of the country's population, with reference to the Singapore context.
L2 [3-5]	For an answer that only focuses on how <u>one policy</u> (eg. fiscal transfers) may <u>and</u> may not be effective in bringing about either sustained growth <u>or</u> broad-based growth, with limited reference to the Singapore context.
L1 [1-2]	A vague, descriptive or list-like answer on how the policies may or may not be effective in bringing about growth.

In addition, up to a further 3 marks for valid evaluative comment. This should focus on seeing how the policies are part of an overall approach that considers both the short- and long-term effects of the policies.

