

INNOVA JUNIOR COLLEGE
JC 2 PRELIMINARY EXAMINATION
in preparation for General Certificate of Education Advanced Level
Higher 1

ECONOMICS

8823/01

Paper 1

29 August 2018

3 hours

Additional Materials: Writing Paper and Cover Page

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/tape.

Answer **all** questions.

Please begin each question on a **fresh sheet of paper**.

At the end of the examination, **submit each question separately**.

Attach a **cover page** to **each case study question**.

Write the **corresponding question number** on the cover pages.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [] at the end of each question or part question.

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

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

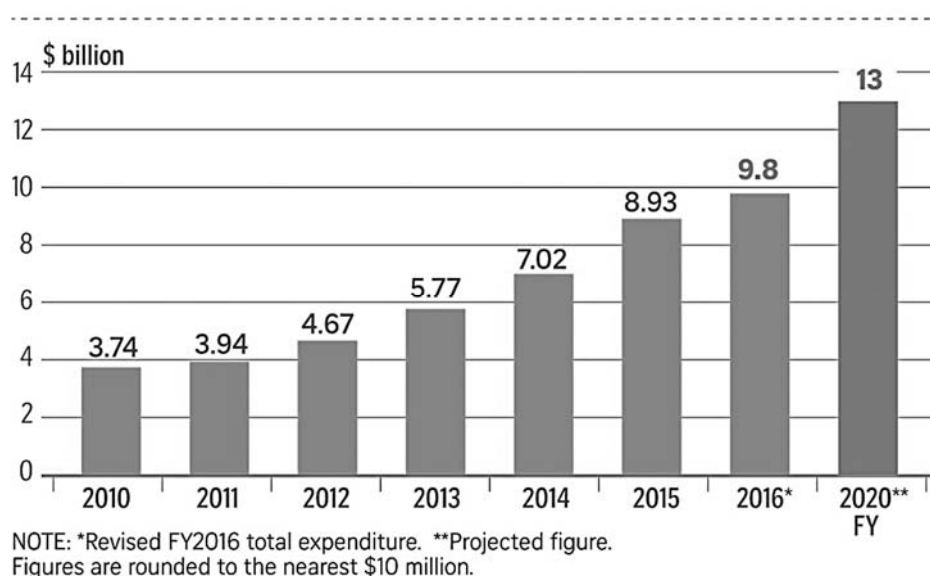


This document consists of 8 printed pages.
Answer **all** questions

Question 1

Healthcare System in Singapore and Japan

Figure 1: Singapore Government Annual Healthcare Spending



Source: Ministry of Finance, Sunday Times Graphics

Extract 1: Gaining better control of rising healthcare costs

Continuing a decade-long phenomenon, global healthcare costs are rapidly rising 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 cost of healthcare benefits today. To reduce hospital admission rates, more emphasis should be placed on encouraging primary care and prevention. Patients should gradually see reason to take charge of their own health. While we can't stop global medical costs from rising, there is much that can be done to more effectively temper the impact of rising costs. For example, through early intervention, care management, innovation, and proactive engagement with customers and healthcare providers. Yes, healthcare benefit costs are rising, especially with more subsidies given, but by collaborating across the industry to implement new and innovative ways to better understand and address the health and medical services that are needed, we can ride the trend, bend the curve and manage costs effectively.

Source: Business Times, 23rd March 2018

Extract 2: Singapore Budget 2018: Spending needs to grow in healthcare

SINGAPORE will put aside some S\$10.2 billion for healthcare expenditure on improvement in capacities and technologies, S\$20 billion for developmental infrastructure and S\$12.8 billion for education this year, 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. "All in all, we expect our average annual healthcare spending to rise from 2.2 per cent of GDP today to almost 3 per cent of GDP over the next decade.

Source: The Straits Times, 19th Feb 2018

Extract 3: Co-payment mandated to curb 'buffet syndrome'

SINGAPORE — To curb the “buffet syndrome” among healthcare consumers who do not have to pay out-of-pocket for their hospital bills due to the Integrated Shield Plans purchased where private insurers will provide full coverage for consumers’ hospitalization bills. The new Integrated Shield plan (IP) riders must feature co-payment of at least 5 per cent, the Ministry of Health announced on Wednesday (March 7).

Speaking at the MOH’s Committee of Supply debate, he said some instances of over-consumption and over-servicing “are, to put it plainly, disturbing”. “In one case, a full rider policyholder made claims for 12 nose scopes in a year, without clear medical need,” he said. “To be fair, not all doctors prescribe such expensive treatments and not all full rider policyholders submit such large claims. But it is clear that full riders have a detrimental impact on overall healthcare costs in Singapore. This is a key reason why rider premiums have increased by up to 225 per cent over the past two years,” he said. “Such behaviours have had an indirect effect on premiums for IP policies across the board, It will be an unsustainable and undesirable outcome for Singapore, especially when we are ageing as a society.” said Mr Chee. IP premiums have risen by up to 80 per cent over the same period, with older policyholders and those on private hospital plans experiencing higher increases.

Source: Todayonline, 8th March 2018

Extract 4: Japanese Health Care System

Japan has a hybrid system. The government pays 70 percent of the cost of all health procedures, unless you’re a low-income elderly resident, in which case it pays as much as 90 percent. The remaining 30 percent is covered by private health insurance -- either employer-sponsored or privately purchased. The high co-payments of a Japan-style system provide the government with a fiscal escape route. If high taxes prove to be too much of a burden on the economy, the co-payments could be increased, preserving the government’s negotiating power while reducing the amount of taxation required. Also, high co-pays would ensure a role for private insurance, preserving the knowledge and expertise of some fraction of the millions who currently work in that industry.

Source: Bloomberg, 19th September 2017

Extract 5: Japan’s ballooning health care cost

Japan’s health insurance system is considered “universal,” since it covers everyone in the country, but it is hardly “free” in the sense of having the government pay for everything with tax revenue. According to the Ministry of Health, Labor and Welfare, in 2016 there were 1.2 million fewer people enrolled in the healthcare insurance programs due mainly to stagnant

population growth. In addition, over the past decade or so the portion of subscribers who were delinquent in their payments has been increasing.

This is a serious problem because in 2015 the amount of money spent on health care was ¥41.5 trillion, a substantial increase over 2014's ¥40.8 trillion. The aging population is definitely the reason for the greater expenditure, but it also may be one of the reasons for increased payment delinquency. Of course, the main reason for ballooning medical expenses is the higher cost of new medical technologies and drugs, most of which the government pays for. When the cost of a procedure or a particular medication goes above a certain level, the patient will be reimbursed for a good part of that cost by the government.

The health ministry is desperately trying to rein in costs, a good portion of which are incurred by hospitalizations. Japan is infamous for its long hospital stays, but the government in recent years has been actively discouraging people from visiting hospitals for routine treatments while also encouraging hospitals to cut the lengths of stays. One way of doing this is to convince people to die at home. Owing to a medical culture that insists everything must be done to keep a patient alive, regardless of the quality of life that results, about 80 percent of deaths in Japan occur in hospitals. In addition, many private hospitals and clinics resist sending patients home because they rely on such patients to make money

Source: Japan Times, 11th August 2017

Questions

- (a) (i) Using Figure 1, describe the trend in annual healthcare spending in Singapore government. [1]
- (ii) Using a diagram, explain whether the consumers or the producers benefited more from the increased subsidies in healthcare. [5]
- (b) What is the main characteristic of a normative economic statement? Identify one example of such a statement from Extract 1. [2]
- (c) Using a demand and supply diagram, explain how the increase in expenditure by government on healthcare infrastructure and ageing population are likely to affect consumers' healthcare spending. [6]
- (d) Using a diagram, explain the opportunity cost incurred when the government decides to increase spending in healthcare. [4]
- (e) Extract 2 mentions about government's growing spending in healthcare. Using relevant diagram(s), explain two possible sources of market failure in the healthcare market. [8]
- (f) Extract 4 stated that the Japanese government pays 70 percent of the cost of all healthcare procedures, explain how it leads to more efficient allocation of resources and comment on why a government implements the co-payment system. [7]
- (g) Using evidence from the case study and/ or your own knowledge, discuss the view that increases in healthcare spending by the government will always improve standards of living. [12]

Question 2**Seeking Sustainable Growth- Short-Term Recovery, Long-Term Challenges****Extract 6: Global Prospects**

The global upswing in economic activity is strengthening. Global growth, which in 2016 was the weakest since the global financial crisis at 3.2 percent, is projected to rise to 3.6 percent in 2017 and to 3.7 percent in 2018. Broad-based upward revisions in the euro area, Japan, emerging Asia, emerging Europe, and Russia—where growth outcomes in the first half of 2017 were better than expected—more than offset downward revisions for the United States and the United Kingdom.

But the recovery is not complete: while the baseline outlook is strengthening, growth remains weak in many countries, and inflation is below target in most advanced economies. Commodity exporters, are particularly hard hit as oil prices fall.

The welcome cyclical pickup in global activity provides an ideal window of opportunity to tackle the key policy challenges—namely to boost sustainable output and to build resilience against downside risks.

Source: International Monetary Fund, October 2017

Table 1: Annual real GDP growth (%) in selected countries

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|
| China | 7.8 | 7.3 | 6.9 | 6.7 | 6.9 |
| India | 6.4 | 7.4 | 8.2 | 7.1 | 6.6 |
| United Kingdom | 2.1 | 3.1 | 2.3 | 1.9 | 1.8 |
| United States | 1.7 | 2.6 | 2.9 | 1.5 | 2.3 |

*Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars.

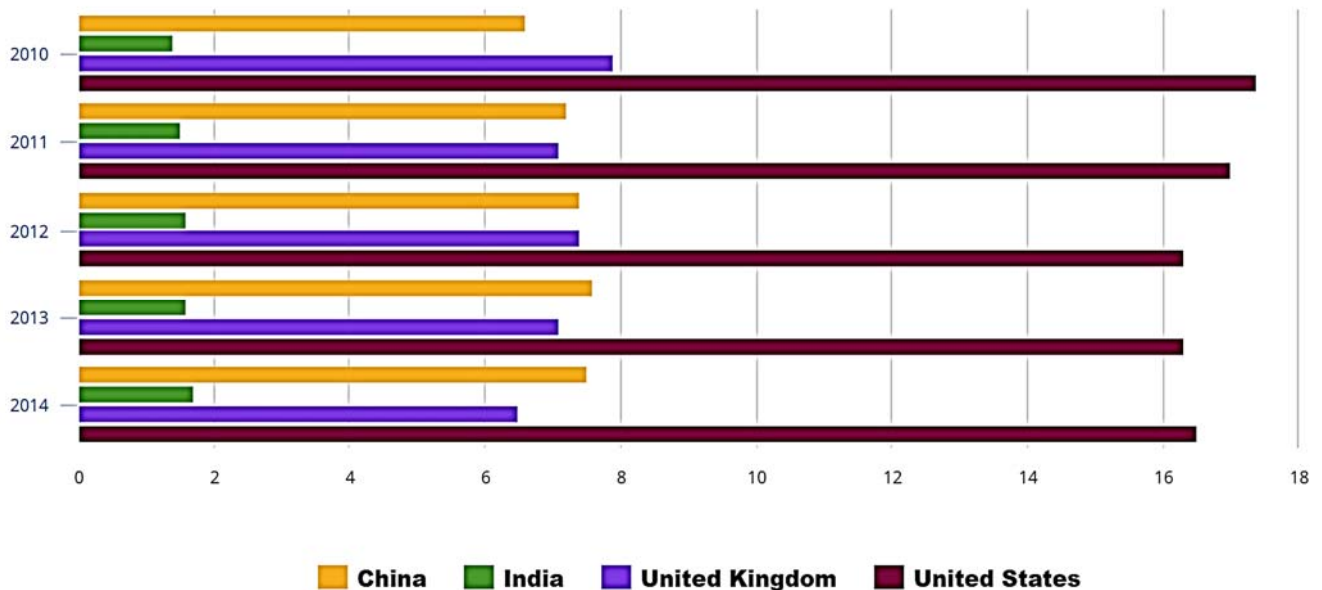
Source: data.worldbank.org, accessed 07.07.18

Table 2: Annual population growth (%) in selected countries

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|
| China | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 |
| India | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 |
| United Kingdom | 0.7 | 0.8 | 0.8 | 0.7 | 0.6 |
| United States | 0.7 | 0.8 | 0.8 | 0.7 | 0.7 |

Source: <http://www.imf.org/external/datamapper>, accessed 07.07.18

Figure 2: Annual CO₂ Emissions per capita (Metric tons)



Source: data.worldbank.org, accessed 18.07.18

Extract 7: UK economy lags behind after 2017 growth rate cut

Britain's economy was weaker than previously thought in 2017, official data showed on Thursday, leaving the country lagging further behind the global recovery as it prepares to leave the European Union. Gross domestic product growth slowed to a quarterly 0.4 percent from a previous estimate of 0.5 percent, reducing 2017 growth as a whole to 1.7 percent, its lowest since 2012. However, this was still stronger than most economists feared immediately after Britain voted to leave the EU in June 2016.

But 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 downgrade of the full-year and fourth-quarter growth rates also raised questions about the strength of the economy as the Bank of England prepares to raise interest rates. Alan Clarke, an economist at Scotiabank, said the figures showed Britain's economy was growing at roughly the pace the Bank of England sees its new, lower speed limit, meaning a rate hike was still on the cards.

But Samuel Tombs, at Pantheon Macroeconomics, said the data showed the central bank should delay any action for now. "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," he said in a note to clients.

Source: Reuters, 22.02.2018., accessed 07.07.18

Extract 8: China's 2017 GDP growth accelerates for first time in seven years

China's economy grew faster than expected in the fourth quarter of 2017, as an export recovery helped the country post its first annual acceleration in growth in seven years, defying concerns that intensifying curbs on industry and credit would hurt expansion. China's gross domestic product grew 6.8 percent in the October to December period from a year earlier. That was better than the 6.7 percent growth forecast by analysts

A synchronized improvement in the global economy over the past year, driven in part by a surge in demand for semiconductors and other technology products, has been a good news to China and much of trade-dependent Asia, with Chinese exports in 2017 growing at their quickest pace in four years. Investment by private firms also rose.

The official growth figures released on Thursday are welcome news for Beijing policymakers who are looking to cut debt and pollution in older industries without stunting growth in the world's second-largest economy. But there could be rising headwinds to further expansion of China's net exports in 2018.

China's excess production capacity has emerged as a major trade irritant for the world's leading economic powers, prompting them to consider new steps to protect domestic industries and jobs from a flood of Chinese imports. U.S. President Donald Trump's administration is considering several unilateral tariff actions on steel, aluminium and China's intellectual property practices likely to draw disputes from WTO members.

There were some positive signs in the household sector in 2017, however, with disposable income growth picking up to 7.3 percent from 6.3 percent in 2016, and final consumption playing a bigger role in driving overall growth last year versus investment than in 2016.

Economists also say growth momentum in the economy is likely to weaken as firms face higher borrowing costs, the government tries to rein in credit and policymakers step up a war on pollution that has hurt the industrial sector in many parts of the country.

Source: Reuters, accessed 18.01.2018

Extract 9: The effects of weather-shocks on economic activity: How can countries cope?

Global temperatures have increased at an unprecedented pace over the past 40 years, and significant further warming could occur, depending on our ability to restrain greenhouse gas emissions, of which has been strongly coupled with increasing economic activities. The greenhouse gas emissions that cause climate change are emitted mainly from burning fossil fuels such as coal, oil and natural gas, which is the most important source of greenhouse gas emissions.

The rise in temperature over the past century has been broad based. No country has been spared from the warming of the Earth's surface, and no country is projected to be spared. Increases in temperature have uneven macroeconomic effects, with adverse consequences concentrated in countries with relatively hot climates, such as most low-income countries. Extreme weather events, such as heat waves, droughts, and floods, are likely to become more frequent, and sea levels will rise, all of which in both the short and medium term, reduces output, suppresses the productivity of workers exposed to heat, slowing investment, and damaging health.

Strategies that reduce specific climate change effects and risks could also be part of the toolkit for reducing the economic damage caused by climate change. Countries negatively affected by climate change will need to increase their resilience to rising temperatures and extreme weather events, both by enhancing their ability to smooth out shocks, which could become more frequent, and by investing in strategies, such as activity diversification, infrastructure investment, and technology innovation, that reduce the harm they do. Populations may also respond to changing climatic conditions by relocating geographically, which could have important cross-border impact. But putting in place the right policies will be particularly difficult in low-income countries, which have huge spending needs and limited ability to mobilize the resources necessary for adaptation in a challenging economic environment.

Source: International Monetary Fund, October 2017

- (a) (i)** Explain what is meant by real GDP per capita. [2]
- (ii)** With reference to data, compare the likely changes in living standards of China and United States during the period 2013 to 2017 and comment on the validity of the conclusion based on the data given. [7]
- (b)** Using Extract 6, explain why commodity exporters, are particularly hit hard as oil prices fall. [3]
- (c)** Using an AD/AS diagram, explain how the fall in the pound after the Brexit vote could have led to higher inflation in the UK. [5]
- (d)** Extract 7 suggest that the Bank of England is preparing to raise interest rates as the Britain's economy recovers.

Explain 2 possible factors that would affect the Bank of England's decision to raise the interest rates. [4]
- (e)** With reference to Extract 9, explain the market failure associated with increasing economic activity. [4]
- (f)** "The rise in temperature over the past century has been broad based. No country has been spared from the warming of the Earth's surface, and no country is projected to be spared."

Discuss the macroeconomic impact of the rise in temperatures on different countries. [8]
- (g)** Using evidence from the case study and/or your own knowledge, discuss the policies governments can take to boost sustainable growth. [12]

[Total: 45 marks]

- End of Paper –

Section A

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**Su
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Model Answers Question 1

| | | |
|-----|---|-----|
| (a) | <p>(i) Using Figure 1, describe the trend in annual healthcare spending in Singapore government. [1] Increase in government spending Comments Well done by most students.</p> | [1] |
| | <p>(ii) Using a diagram, explain whether the consumers or the producers benefited more from the increased subsidies in healthcare.</p> <p>[2] Identification of the importance of relative elasticity as the determining factor. Explaining judgement. Anything reasonable can be accepted, PED inelastic due to medical services as necessity. PES has been increasing due to rise in government spending and increase in spare capacity. [1] Concluding who has more subsidy incidence [1] Identifying the area for the subsidy incidence for both consumers and producers [1] One mark for clear accurate diagram illustrating the different elasticity</p> <div style="text-align: center;"> </div> <p>As healthcare services are basic needs for consumers and they are unable to live without it, especially if they have fallen sick, in this case curative healthcare, the PED is highly price inelastic. In comparison to that of the supply of healthcare, where the government has been subsidising and increasing the capacities of healthcare services with the building of more facilities, the PES of healthcare will be more price elastic. With a relatively more price inelastic demand for healthcare, there could be a higher consumer incidence of area P₀P₁CB while the producer incidence of the incidence is P₀P₂AB.</p> <p>When the consumers are less responsive to price changes, they will enjoy a greater benefit with a higher consumer incidence in comparison to that of the producers.</p> | [5] |

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| | | |
|-----|---|-----|
| | <p><u>Comments</u> Most students are unable to differentiate between tax and subsidy incidence. Question was badly done by most student where those who managed to identify the area, mixed up between the consumer and producer incidence.</p> | |
| (b) | <p>What is the main characteristic of a normative economic statement? Identify one example of such a statement from Extract 1.</p> <p>[1] Subjective and value based statements, often opinion based. [1] "Patients should gradually see reason to take charge of their own health" OR "To reduce hospital admission rates, more emphasis should be placed on encouraging primary care and prevention."</p> <p><u>Comments</u> Random answers by some candidates, some just left it blank.</p> | [2] |
| (c) | <p>Using a demand and supply diagram, explain how the increase in expenditure by government on healthcare infrastructure and ageing population are likely to affect consumers' healthcare spending.</p> <p>[2] Explaining demand factor using ageing population linking to diagram [2] Explaining supply factor using increase in expenditure by government on healthcare infrastructure linking to diagram [1] Clear use of diagram [1] Impact on healthcare spending Max5: Link to the extent of shift.</p> <p><u>Comments</u> Some simply identified one component and one shift. Did not make use of the diagram to analyse the impact on healthcare spending.</p> | [6] |
| (d) | <p>With reference to Extract 2, using a diagram, explain the opportunity cost incurred when the government decides to increase spending in healthcare.</p> <ul style="list-style-type: none"> - Well labelled PPC diagram [1] - Limited resources due to scarcity or the provision of graphical analysis [1] - more spending on healthcare meant lesser spending other sectors like infrastructure or education [1] - Next best alternative foregone [1] <p><u>Comments</u> There were a handful of incomplete diagrams, many did not make use of the diagram to relate and explain the opportunity cost.</p> | [4] |

| | | |
|-----|---|-----|
| (e) | <p>Using relevant diagram(s), explain two possible reasons for the above government intervention in the market for healthcare.</p> <p>[4] Presence of externality</p> <ul style="list-style-type: none"> - Diagram - Explain MEB (3rd Party benefit from the healthcare, a more productive workforce due to better health, better quality goods and services. - Under consumption of healthcare due to Q_m lesser than Q_s - Deadweight loss leading to market failure therefore requires government intervention <p>[4] Imperfect information</p> <ul style="list-style-type: none"> - Diagram - Explain undervaluation of healthcare due to the imperfect information regarding the long term benefits, especially from preventive healthcare. - Under consumption of healthcare due to Q_m lesser than Q_s - Deadweight loss leading to market failure therefore requires government intervention <p><u>Comments</u></p> <p>Confusion between externality and imperfect information. Some students mixed up both analysis and could not differentiate them even in the diagrams.</p> <p>Some students had interpreted the question wrongly and related to the problem of overconsumption, which is accepted if they link to how there could be an over subsidy. However, most students linked that to negative externality, which is incorrect.</p> <p>For students who mentioned that the subsidy might have resulted in an over consumption of healthcare due to over subsidy and hence an additional deadweight loss incurred leading to inefficiency, the answer is also acceptable.</p> <p>This is a theoretical question about the market failure in healthcare.</p> | [8] |
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| | | |
|-----|--|-----|
| (f) | <p>Extract 4 stated that the Japanese government pays 70 percent of the cost of all healthcare procedures, explain how it leads to more efficient allocation of resources and comment on why a government implements the co- payment system.</p> <p>[3] Explain how the subsidy improves efficiency</p> <ul style="list-style-type: none"> - Government payment of 70 percent of the cost of all healthcare procedures is similar to offering the subsidies to the consumers - Increase of the MPB to increase the current consumption Q_m to Q_s - Reduced the deadweight loss and improve allocative efficiency <p>[4] Comment on why government implements the co- payment system</p> <p><u>[2] Explaining the problem with the subsidy which might lead to an over consumption</u></p> <ul style="list-style-type: none"> - Co- payment could help in reducing the over consumption of healthcare. 70 percent of the cost of all healthcare procedures might have resulted in the under pricing of healthcare where consumers might end up over consuming them. - Excessive use of healthcare as seen in extract 3, Singapore healthcare that has been excessive used as healthcare has been over subsidized - Extract 5 mentioned about the ballooning healthcare cost in Japan, excessive subsidy to healthcare might lead to undervaluation of MPC to individual. There might be overconsumption of healthcare. <p><u>[2] Commenting on how the co-payment solves the problem solves the issue</u></p> <ul style="list-style-type: none"> - Co- payment reduces the MPB of the consumers - Reduce over consumption of healthcare - Reduces the excessive subsidy that the government needs to pay <p>OR</p> <p><u>[2] Relating to the problems of the over subsidy</u></p> <ul style="list-style-type: none"> - Excessive subsidy could have resulted in opportunity cost incurred - Reduction in government budget available for other sectors like education, which could worsen the SOL or the competitiveness of the labour force. <p><u>Comments</u></p> <p>Most of the answers did not make use of extract information. There were also very minimum explanation of how the subsidy improves efficiency, most just vague description without economic analysis.</p> <p>The first 3m of the question, is a policy question about how the subsidy could resolve the market failure in healthcare. The remaining 4m of the question is open to the students to explain the possible problems with subsidies and how the implementation of co-payment could resolve that issue.</p> | [7] |
|-----|--|-----|

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|-----|---|------|
| (g) | <p>Using evidence from the case study and/ or your own knowledge, discuss the view that increases in healthcare spending by the government will always improve standards of living.</p> <p><i>Increase in healthcare spending will always improve the non- material standards of living.</i></p> <p>Extract 2: Singapore putting aside S\$10.2 billion for healthcare expenditure on improvement in capacities and technology, where there will be improvement in care quality and the building of more general and community hospitals, polyclinics.</p> <p>EA: Improvement in the technology and care quality would improve the satisfaction derived by the consumers or healthcare. Furthermore, with more facilitates and higher capacities, cost can be maintained, therefore prices will be lower, increasing the accessibility of healthcare for the consumers. In addition waiting time for the individuals will be greatly reduced. Therefore the non- material standard of living would increase, especially with better healthcare, there could be higher life expectancy as indicated by the human development index, and this could be an indication of higher standards of living.</p> <p>EV: Despite the general improvement in standards of living, the marginal improvement in non-material standard of living could differ between individuals dependent on their needs for the different types of healthcare facilities. With the current ageing population, the current healthcare spending might focus more on elderly related diseases and illness, therefore compromising on the spending for other specific healthcare specialization.</p> <p><i>Increase in healthcare spending will always improve the material standards of living.</i></p> <p>Extract 2: S\$10.2 billion on healthcare spending and the annual spending increasing from 2.2 percent of GDP to almost 3 percent of GDP.</p> <p>Extract 5: This is a serious problem because in 2015 the amount of money spent on health care was ¥41.5 trillion, a substantial increase over 2014's ¥40.8 trillion.</p> <p>E.A: Increase in government spending on healthcare, increase in AD as G is a component of AD leading to a multiplied increase in real national income where economy would enjoy actual growth. With a higher RNY, more income, purchasing power, more consumption of goods and services. Higher satisfaction and utility therefore higher material SOL. (Include AD/AS diagram). Furthermore with more output, there could also be creation of more employment since labour is a factor input that is essential in the healthcare services. With more employment meant there could be more individuals earning an income and now better able to demand more goods and services, increasing their material SOL.</p> <p>EV: The effectiveness of the government spending in bringing about economic growth and improvement in SOL is dependent on whether the respective economies face crowding out effect too. From Extract 2, with Singapore context in consideration, the likelihood of resource crowding out would be significant as the mere competition for land might have resulted in a sharp increase in cost of production for firms, reducing investments. Even from extract 5, in Japan, they are currently facing a budget debt problem and additional spending on healthcare might</p> | [12] |
|-----|---|------|

lead to financial crowding out.

Increase in healthcare spending will not always improve the material standards of living especially in the future.

Extract 1: Continuing a decades-long phenomenon, global healthcare costs are rapidly rising as populations' age, chronic conditions become more prevalent and demand for healthcare services outpaces supply.

Extract 5: This is a serious problem because in 2015 the amount of money spent on health care was ¥41.5 trillion, a substantial increase over 2014's ¥40.8 trillion. The health ministry is desperately trying to rein in costs, a good portion of which are incurred by hospitalizations.

E.A: Rising healthcare expenditure is a strain on the budget for the government, in the long run, these budget constraints have to be solved by austerity measures which might require the government to cut on expenditure and increase in taxes. E.g. with the increase in corporate tax that reduces post tax profits and increase in income taxes that reduced disposable income. These measures will lead to a fall in consumption and investment which decreases AD, bringing about a multiplied fall in RNY, decreasing purchasing power, consumption of goods and services and decreasing material standards of living in future.

EV: This constraint is further amplified with the slow global recovery and rising protectionism in economies like US, for economies like Singapore that is highly dependent on trade where a portion of the budget has to be spent on economic development. In addition, for economies that are already in a debt problem like Japan or the EU, the need for austerity would be inevitable.

Increase in healthcare spending will not always improve the non- material standards of living.

Extract 2: Singapore will put aside some S\$10.2 billion for healthcare expenditure on improvement in capacities and technologies, S\$20 billion for developmental infrastructure and S\$12.8 billion for education this year, Finance Minister Heng Swee Keat said on Monday. Unveiling the Budget for 2018, Mr Heng said the government expects to spend more on healthcare.

E.A: With limited budget, all expenditure on healthcare would lead to an opportunity cost incurred, in this context, it could be the developmental infrastructure and education. Lesser spending on infrastructural development might mean that traveling would be less accessible especially for large developing economies where cities are less connected. It might mean lesser accessibility to employment and goods and services. Education which is essential to improve literacy rate to improve the non- material SOL might be compromised with more money being spent on healthcare. The scope of influence that education has, is wider and benefiteres are often the younger generation while spending on healthcare might only impact a minority who are most likely to be part of the ageing population.

EV:

The choice of how the budget should be allocated is essential in affecting the SOL, the increase in healthcare spending will overall improve the non- material SOL for

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economies that has a relatively larger population that requires more healthcare, probably the ageing population. However, for young and growing economies, more budget might need to be spent in education to improve the general non-material SOL for the economies.

| Level | Description | Marks |
|-------|--|-------|
| 3 | Considerations of current and future SOL, both material and non- material aspects. Relating to both an improvement and a worsening of SOL, stating criteria and situations when it would always improve SOL. | 6-9 |
| 2 | One sided answer without full consideration of differing aspects of SOL. | 3-5 |
| 1 | Smattering of random points. | 1-2 |
| E2 | Valid evaluative comment that considers whether the healthcare spending will always improve standards of living. | 2-3 |
| E1 | Unsupported judgement | 1 |

Comments

Most students provided vague answers with no reference to extract. There were missing economic analysis and some students did not have sufficient time to even complete the question.

Total : [45 marks]

Question 2 Suggested Answer

| | | | |
|-----|------|---|-----|
| (a) | (i) | <p>Explain what is meant by real GDP per capita.</p> <p>Average output of the economy per person measured in a base year prices/ after adjusted for inflation.</p> | [2] |
| | (ii) | <p>With reference to data, compare the likely changes in living standards of China and United States during the period 2013 to 2017 and comment on the validity of the conclusion base on the data given.</p> <p>Both China and US are likely to have experienced an increase material SOL between 2013 to 2017. This is with reference to Table 1 where positive real growth has been achieved by both nations throughout the years. The annual real GDP growth rates are also higher than the annual population growth rate across the years for both countries. When real GDP growth rates are higher than annual population growth rates, it can be estimated that the real GDP per capita has increased.</p> <p>An increase in real GDP per capita suggests an increase in real purchasing power of the average citizen which increases the ability of one to consume more goods and services to satisfy more wants and improve material SOL. However, given that increase in real GDP per capita is constantly higher than that of US's, China will experience a faster increase in material SOL for an average citizen.</p> <p>Extract 8 also reaffirmed the quick rise in MSOL in China as with Chinese exports in 2017 growing at their quickest pace in four years and investment by private firms rising, this suggests expansion in output and rise in demand for labours, reducing unemployment. With higher wages, Chinese citizens are likely to be able to consume more goods and services to satisfy more wants and improve material SOL.</p> <p><u>Comments on validity of conclusion on MSOL</u></p> <p>The change in real GDP per capita is likely to be an accurate estimate for the change in MSOL. Some limitations however, includes size of hidden economy or rising income inequality.</p> <p>With large size of hidden economy, real GDP per capita which excludes the hidden economy may underestimate the increase in real GDP per capita and hence the increase in MSOL in both US and China. This however, does not change the outcome of an increase in MSOL for both countries. China is also likely to still experience a higher increase in MSOL compared to US as the difference in real GDP growth rates between the 2 countries is large. It is unlikely for US to have such a large hidden economy for it to actually have a higher real GDP growth per capita compared to China. Hence, the conclusions on MSOL base on the data is likely to be valid.</p> <p>For non-material standard of living which measures the quality of life including intangible aspects such as pollution levels, access to sanitation and education etc, it can be seen from Fig 2 that US has the highest Annual CO₂ Emissions per capita from years 2010 to 2014. This suggests that air pollution is a rising issue in US and could increasingly adversely affect the quality of air for her citizens. High level of externalities could cause third party costs as citizens experience poorer health and higher medical costs, resulting in lower non-material SOL.</p> | [7] |

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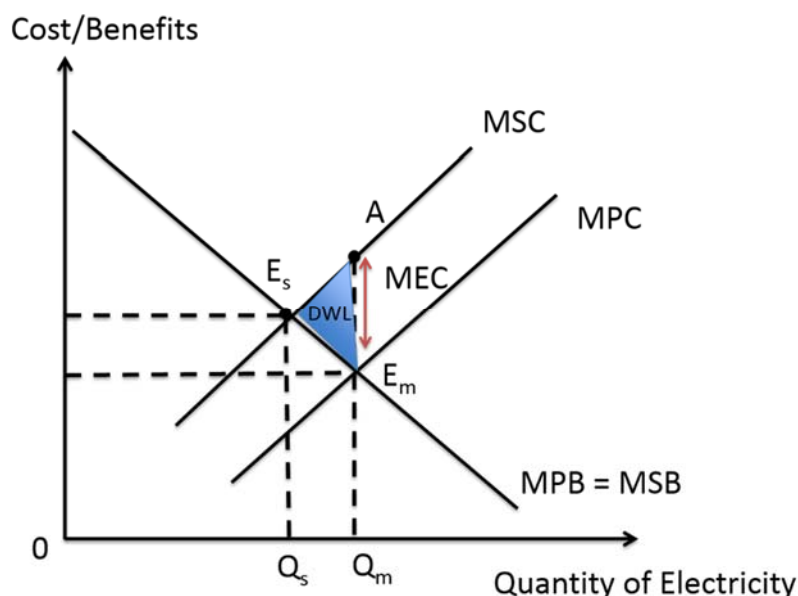
| | | |
|-----|--|-----|
| | <p>There is also a need to consider rising income inequality in China and US. China (0.467 in 2017) has higher rising inequality compared to US (0.415 in 2016). It suggests that the rise in real GDP in China is not equal among her citizens. Hence, even with a higher rise in real GDP per capita, the data is not accurate in reflecting change in MSOL in average citizen.</p> <p><u>Comments on validity of conclusion on NMSOL</u></p> <p>On air pollution, concentration of emissions is an important consideration as rising emissions usually leads to increasing MEC on the society. If the contribution of emissions in China is concentration in only a few cities, there rapid fall in NMSOL with higher MEC incurred. Hence, it's not sufficient to only consider Annual CO2 Emissions per capita but also its concentration.</p> <p>Lack of information on other aspects of NMSOL from data is also another consideration. The data lack information on other aspects such as access to sanitation and leisure time etc. Should China have lower leisure time over the years compared to US, NMSOL could also be considered to have decreased in China. Hence, conclusion on NMSOL is inconclusive.</p> <p>1m for correct understanding of living standards</p> <p>Plus up to 3 further marks for valid explanation of changes in living standards of China and US during the period 2013 to 2017. Max 2m if candidates only address material/non-material aspect of SOL.</p> <p>Up to a further 3m for valid and relevant comment on the validity of the claim. Max 2m if the comment is restricted to only material or non-material SOL.</p> | |
| (b) | <p>Using Extract 6, explain why commodity exporters, are particularly hit hard as oil prices fall.</p> <p>Demand for commodities are price inelastic [1]</p> <p>P oil falls \Rightarrow less than proportionate increase in Qd of oil [1]</p> <p>Total revenue of commodity exporters falls [1], hence are particularly hit.</p> | [3] |
| (c) | <p>Using an AD/AS diagram, explain how the fall in the pound after the Brexit vote could have led to higher inflation in the UK.</p> <p>Fall in pound \Rightarrow depreciation [1] \Rightarrow Rise in price of imported factor inputs in pounds [1] \Rightarrow SRAS falls from $SRAS_0$ to $SRAS_1$ [1] \Rightarrow GPL increases from P_0 to P_1 [1]</p> <p>1m for well-labelled accurately drawn diagram</p> | [5] |
| (d) | <p>Extract 7 suggest that the Bank of England is preparing to raise interest rates as the Britain's economy recovers.</p> <p>Explain 2 possible factors that would affect the Bank of England's decision to raise the interest rates.</p> | [4] |

- 1) Consideration on conflict between economic growth and inflation. Raising interest rates (CMP) will reduce C and I ➔ reduce demand pull inflation but may compromise on actual growth as AD falls. [2m]
- 2) Limitations of the CMP policies such as interest elasticity of demand for investments will affect the choice of CMP as a tool by the Bank of England to tackle the potential inflation problem. [2m]

(e) With reference to Extract 9, explain the market failure associated with increasing economic activity.

[4]

Increasing economic activity has led to greenhouse gas emissions that cause climate change emitted mainly from burning fossil fuels such as coal, oil and natural gas. This has led to negative externalities due to the over-production of electricity from burning of fossil fuels.



Negative externalities in production which are the external cost borne by others in society who are not directly involved in the production or consumption of electricity. E.g., the production of electricity in coal-fired power plants **results in the emission of greenhouse gases such as carbon dioxide, which could lead to higher temperatures, cause the melting of polar ice caps and flooding of low-lying regions.**

With negative externalities in production, the marginal social cost (MSC) is **higher than** the marginal private cost (MPC). **Hence the MSC curve is above the MPC curve.**

Assuming that there is **no positive externality** (Figure 3), the marginal private benefit (MPB) equals to marginal social benefit (MSB), hence **MPB = MSB.**

In the free market, producers only consider the marginal private costs and benefits **such as labour costs and other operating costs** and the **profits from selling electricity**. Similarly consumers only consider the marginal private costs and benefits such as the **cost of their electricity bill** against the benefit of powering their appliances and electronics. The **free market equilibrium is at E_m where the equilibrium quantity is at Q_m, where MPC = MPB.**

| | | |
|-----|---|-----|
| | <p>However, allocative efficiency occurs at the socially optimal equilibrium where $MSB=MSC$, such that the socially optimal quantity is at Q_s. This is because when $MSB < MSC$, there is a net decrease in social welfare from additional production of electricity.</p> <p>Since Q_m is more than Q_s, there is an over-production of electricity. The over-production of electricity results in social welfare loss (deadweight loss) of area $AEmEs$. This is because for Q_sQ_m units that are over-produced, the marginal social benefit (MSB) is less than the marginal social cost (MSC) of producing it. Hence the over-allocation of resources into electricity has resulted in a partial market failure and society's welfare will not be maximized.</p> <p>[1]: Negative externality in production [1]: MEC explanation causing the divergence btw MSC and MPC [1]: Market and Social equilibrium [1]: Over production and DWL</p> | |
| (f) | <p>“The rise in temperature over the past century has been broad based. No country has been spared from the warming of the Earth’s surface, and no country is projected to be spared.”</p> <p>Discuss the macroeconomic impact of the rise in temperatures on different countries.</p> <p>Rise in temperatures reduces output, suppresses the productivity of workers exposed to heat, slowing investment, and damaging health. The rise in temperature over the past century has been broad based. Macroeconomic goals of all countries are affected.</p> <p>Firstly, rise in temperature slows investments. This reduces AD in countries and as AD falls from AD_0 to AD_1, RNY falls from Y_0 to Y_1, reducing actual economic growth. With fall in actual growth, there could be a fall in demand for workers and a rise in cyclical unemployment results.</p> <p>Also, productivity of workers exposed to heat are affected as their health are damaged. Health impact could include rise in skin problems and in severe cases, dehydration issues. This has impact both on the SRAS and LRAS of the economies. Fall in productivity results in rise in unit COP as more workers are needed to produce the same level of output. SRAS falls from $SRAS_0$ to $SRAS_1$, with RNY falling from Y_0 to Y_1 and GPL increasing from P_0 to P_1, bring potential stagnation problem to the country. LRAS could also fall as potential capacity of the economy falls with fall in quality of labour. Potential economic growth falls.</p> <p>However, increases in temperature have uneven macroeconomic effects, with adverse consequences concentrated in countries with relatively hot climates, such as most low-income countries. The above arguments are more likely to occur in low-income countries with hot climates as these countries are likely to have large agricultural sectors as key drivers for the economy. Extreme weather events, such as heat waves, droughts, and floods brought about by the climate change will destroy crops and have them to lose their comparative advantage when land resources are altered. As farmers, the workers are more exposed to the change in climatic conditions and hence higher impact on health. AD and AS of these countries are likely to fall by a large extent.</p> <p>However, strategies that reduce specific climate change effects and risks could also be part of the toolkit for reducing the economic damage caused by climate change. This depends on effectiveness of government policies to increase their resilience to rising temperatures and</p> | [8] |

extreme weather events. If the governments of the low income countries invest in strategies, such as activity diversification, infrastructure investment, and technology innovation, the government could effectively divert resources from agricultural sectors to the new growth sectors which are less vulnerable to climate changes.

Governments may also invest in green sectors as a potential growth sector to mitigate the risks and yet achieve sustainable economic growth through successful exports of green technology.

In conclusion, highest impact on goals is felt in low-income countries with hot climates as these countries are worse hit by the change in climate conditions and lack resources to implement effective policies to mitigate the risks. That said, this does not mean developed countries are not affected many of them also have strong agricultural sectors. Changes in climatic conditions are not restricted to heat waves but also extreme winter conditions which countries such as Japan and US are vulnerable to. Output and productivity in these countries could similarly be affected.

| Level | Description | Marks |
|-------|--|-------|
| L2 | Well-developed explanation on the impact of a rise in temperature on the macroeconomic goals of different governments . | 4-6 |
| L1 | A vague, descriptive or list-like answer on the impact of a rise in temperature on an economy. Answer lacks economic analysis or scope. | 1-3 |
| EV | In addition, up to a further 2 marks for valid evaluative comment on the extent of the impact on either one or different economies. | 1-2 |

(g) Using evidence from the case study and/or your own knowledge, discuss the policies governments can take to boost sustainable growth.

[12]

Sustainable economic growth means a rate of growth which can be maintained without creating other significant economic problems, especially for future generations.

To achieve higher economic growth, especially in countries such as US, UK as well as commodity exporting countries where growth remains weak, a variety of demand and supply side policies can be adopted.

Explain how UK should continue its EMP by keeping interest rates low (Extract 7)

Low Interest rates ⑦ encourage C and I and cost of borrowing is kept low ⑦ firms' expected profitability increases where consumers' opportunity cost to spending falls ⑦ rise in AD ⑦ actual growth results

However, this may worsen the inflation problem in the economy due to the weaker pound. With final consumption playing a bigger role in driving overall growth in China in 2017, China, similar to UK may also continue to adopt EMP to further encourage increase in C so as to increase AD

This policy is appropriate as potential unilateral tariff from the US to protect her domestic industries will affect exports of China negatively. To prevent a fall in exports demand which affects China's growth, transforming the economy to be more internally driven, i.e. relying on domestic sectors can avert such risks.

On the other hand, China may consider adopting EFP as her policymakers step up a war on pollution that has hurt the industrial sector in many parts of the country. To achieve sustainable economic growth, China needs to look into curbing the emissions problem in the country. With large agricultural sectors and majority of the country still low-income, rising emissions in the country greatly contributes to extreme weather events and productivity in workers due to the rise in negative externalities generated.

China could adopt EFP to develop sectors on renewable energy. Rise in G on technologies in renewable energy could develop comparative of china in this area leading to rise in investments in the sector. In 2015, China was the largest investor in domestic renewable energy, investing \$102bn in 2015. This not only contributes to actual growth in China but also potentially reduce emissions in the country when renewable energy replaces traditional energy sources such as fossil fuels. With fall in MEC, environment improves and sustainable growth results.

However, not every country could engage in the same policy as the country may not have a strong sector in renewable energy. Also, the policy is not a SR policy and could prove to be ineffective in reducing current problems brought by emissions problems. Hence, in the SR, policies to curb negatives externalities must be implemented. For example, in US where annual CO₂ emissions per capita is the highest, she may consider the implementation of carbon taxes on firms. Carbon taxes of the size of MEC raises the cost of production for firms and force firms to internalize the MEC in the production. MPC increases to MSC and a socially optimal output of Q_s results. The over-production problem is resolved and DWL eliminated. This protects the environment from further deterioration and productivity of workers can be prevented from falling.

As rapid economic growth often incur costs on the environment, governments need to consider the pacing of growth to avoid rapid deterioration to the environment. Depending on the current economic priority of the government, this then affects the policies the governments can take. In the SR, policies to curb negative externalities are important. In the long run, supply side policies that look into new technology to contribute production without cost on environment is the key to sustainable economic growth.

| Level | Description | Marks |
|-------|--|-------|
| L3 | In-depth discussion of the effectiveness and limitations of at least two policies applied to different governments to achieve sustainable economic growth. | 6-9 |
| L2 | Under-developed discussion of the effectiveness and/or limitations of policies to boost sustainable growth . Answer may not have addressed sustainable growth but only sustained growth. Answer may not have applied to different governments. | 3-5 |

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| | L1 | A vague, descriptive or list-like answer on the policies. | 1-2 | | |
| | EV | In addition, up to a further 3 marks for valid evaluative comment that considers the relative effectiveness of policies to boost sustainable growth in different economies. | 1-3 | | |
| [Total: 45 marks] | | | | | |